A. M. A.
SCIENTIFIC EXHIBITS
1956

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Sponsored by

Council on Scientific Assembly

American Medical Association



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PREFACE

The preface of **A.M.A. Scientific Exhibits 1955** stated that "the Scientific Exhibits presented at each Annual Meeting of the American Medical Association offer the finest medical postgraduate course in the world. Their growth in popularity has been so rapid that many physicians regard the Scientific Exhibits as the main attraction of the Annual Meetings."

The character of medical meetings has changed markedly in the last generation. This is not to be wondered at, considering advances made in communication, in transportation, in the production of new items in industry and in changes in the social structure of the community, all of which have influenced our way of living. The participant in the medical meeting of today finds that the spoken word is still necessary to convey information, but he finds also that audiences want to be shown. Scientific Exhibits have satisfied this demand because they present the latest advances in medicine in a form that can be quickly comprehended, with a lasting visual impression.

Formerly, there was no adequate reproduction of Scientific Exhibits and when the meeting was over, the exhibits were dismantled, many of them never to appear again. In 1955, the volume **A.M.A. Scientific Exhibits, 1955** was published by Grune & Stratton, depicting exhibits shown at the Atlantic City meeting. The response to that book has been gratifying indeed and has induced the publishers to continue the project.

Experience has dictated the necessity of some changes in the second volume in order to improve the caliber of reproduction, at the same time decreasing the cost and getting the publication to the customer at an early date after the meeting.

A few of the commercial exhibits from the Technical Exposition are also reproduced this year as an experiment. It is felt that the commercial exhibits are an integral part of the meeting and that many physicians find them an important source of information on new products. These commercial exhibits are carried in much the same manner as advertising in medical journals. If this trial is successful and many pharmaceutical and instrument manufacturers wish to participate next year, the revenue from this source will be used to reduce the price of the book and allow further improvements in quality.

The scientific exhibits at the Chicago meeting included an abundance of material artistically prepared and scientifically valuable. It was impossible to reproduce all of this which would have required some three thousand pages. The editors have confined their selections therefore to the exhibits which received award together with a few additional outstanding ones.

Acknowledgments are due to the cooperation of the publisher Grune and Stratton, Inc., and members of their staff to undertake a second edition of this volume. Numerous conferences were held with Mr Henry M Stratton and with Dr Richard H Orr Medical Director concerning details of the work. Dr Austin Smith gave much valuable advice concerning the project. By the agreeable cooperation of all parties concerned an early publication has been possible.

THOMAS G HULL
Secretary Council on Scientific Assembly

CONTENTS

ANESTHESIOLOGY

DERMATOLOGY

DISEASES OF THE CHEST

EXPERIMENTAL MEDICINE AND THERAPEUTICS

GASTROENTEROLOGY AND PROCTOLOGY

GENERAL PRACTICE

INTERNAL MEDICINE

LARYNGOLOGY OTOLOGY AND RHINOLOGY

MILITARY MEDICINE

OBSTETRICS AND GYNECOLOGY

OPHTHAL...

ORTHOPEDIC SURGERY

ARTHRITIS AND RHEUMATISM

MISCELLANEOUS TOPICS

COMMERCIAL EXHIBITS

A. M. A.

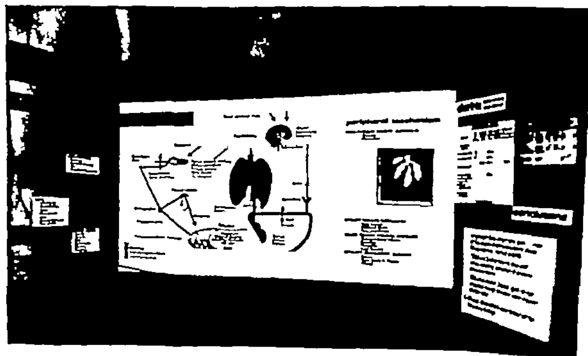
SCIENTIFIC EXHIBITS

1956

Pulmonary Edema: Antifoam Agents.

REUBEN C. BALAGOT, ROSAURO MA. REYES, GARETH B. GISH, and MAX S. SADOVE, University of Illinois College of Medicine, Chicago.

The causes and contributory factors in pulmonary edema are enumerated. A graphic illustration of the mechanisms that possibly cause pulmonary edema is depicted. The usual methods of treatment are given. Results of studies of the effects of antifoam agents are shown. Some toxicity studies with these agents were done both from the acute and the chronic aspects.



etiology

COMMON DENOMINATOR

Frothy foam formed in the tracheo bronchial tree prevents oxygenation

CENTRAL NERVOUS SYSTEM
- Skull Trauma
- Subarachnoid hemorrhage
- C.V.A
- Encephalitis meningitis polio, tetanus

CARDIOVASCULAR
- Hypertension
- Coronary
- Pulmonary
- Rheumatism
- Syphilis
- Congenital
- Shock

ALLERGIES
- Angioneurotic edema
- Serum sickness
- Asthma (?)

OTHERS
- Thyroid crisis
- Beriberi
- Insulin shock

POISONS
- ANTU (thiourea)
- Anti cholinesterases
- Opiates
- Methyl salicylates
- Iodides
- Acetic and Butyric ether
- Phenyl carbamide

OBSTETRICS
- Pregnancy or labor

RESPIRATORY CONDITIONS
- Pneumonia
- Obstruction
- Irritants
- Rapid thoracentesis
- Chest trauma
- Post lobectomy

SURGERY
- Over-transfusion
- Manipulation of stellate ganglia

mechanisms

Direct emotional stress

Hypothalamus

Chloral
Barbiturates
Morphine

Medullary center

Stimulation

Sympathetic chain

Positive pressure breathing
Alcohol vapor (20–95%)
Silicone aerosols
Octyl Alcohol
O_2 inhalation

Sympatholytics
Spinal anesthesia

Reflex

Ad enal medulla

Carotid body

Celiac ganglion

Antihistamines
Heparin

Overfill g

Epinephrine

Vagus

Atropine

Vasoconstriction

Vena cava

Aminophyllin
Mercurial diuretics
Venisection, Tourniquets
Hot bath

Digitalis
Ouabain
Digitoxin

Increased peripheral resistance

Aorta

Key to text
Structures
Reactions & agents → Edema
Counteracting drugs

peripheral mechanism

INTRA ALVEOLAR PRESSURE DECREASED IN:
- Dyspnea
- Obstruction



CAPILLARY PRESSURE INCREASED IN:
- Renal Ischemia
- Emotional Stress
- Epinephrine Release

COLLOID OSMOTIC PRESSURE DECREASED IN
- Prolonged Saline Infusion
- Nephrosis
- Starvation
- Liver Disease

CAPILLARY PERMEABILITY INCREASED IN:
- Anoxia
- Toxic Gases & Poisons
- Allergy

Anyone of the 3 factors may not cause pulmonary edema Capillary pressures up to 50 mm Hg have been recorded without pulmonary edema developing

Increased capillary pressure or diminished colloidal pressure or both plus increased capillary permeability will cause pulmonary edema

Anoxia is one of the greatest causes of increased capillary permeability

LABORATORY STUDY

AGENT	No. OF ANIMALS	LUNG WGT / BODY WT RATIO	AVER SURVIVAL TIME	No SURVIVING MORE THAN 1 HR.	PERCENT SURVIVAL (Based on No. surv. after 1 hr
Epinephrine (Control)	20	1.4103	2.9 mins.	0	0
Ethyl alcohol 10%	15	1.223	8.33 mins.	1	6%
Ethyl alcohol 20%	17	1.3115	24.20 mins.	3	17.6%
#5526 2 Ethyl hexanol	25	1.0160	29.08 mins.	8	32.0%
#5507 Silicone-0.01% Superinone-0.75% Glycerin 1% Potassium Bicarbonate-1%	34	0.8393	44.04 mins.	18	53%
Ethyl alcohol 95% (Luisada)	16	1.030	41 mins.	10	62%

*Normal-0.465 (Luisada)

CLINICAL STUDY

INVESTIGATOR	AGENT	No. OF CASES	RESULTS Excellent	Good	Fair	Poor
1. Luisada Goldman Weyl	Ethyl alcohol 95%	17	10	5		2
2. Reich Rosenberg	2 Ethyl hexanol	12	6	3	1	2
3 This study	#5507	7	5	2		

peripheral mechanism

INTRA ALVEOLAR PRESSURE DECREASED IN:
- Dyspnea
- Obstruction



CAPILLARY PRESSURE INCREASED IN:
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- Emotional Stress
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Increased capillary pressure or diminished colloidal pressure or both plu[s] increased capillary permeability will cause pulmonary edema.

An[oxia] is one [o]f the gr[e]atest causes of increased capillary permeability.

Function of the Committee on Placement of the American Society of Anesthesiologists.

Irving M. Pallin, Brooklyn, N Y

This exhibit is designed to demonstrate how placement service can be maintained for members of medical society This service provides means of educating the younger physician in the ethics and proper conduct of the practice of medicine, and anesthesiology in particular. It also establishes favorable public relations with hospitals by providing them with an understanding of the ethics of medical practice and means of obtaining properly qualified anesthesiologists. This exhibit presents the method operated and indicates the effectiveness of the committee by statistics.

Postgraduate Education in Anesthesia.

Oral B. Crawford, Springfield, Mo., and J Jay Jacoby Columbus, Ohio.

A recent survey indicated that there are approximately 10,000 part-time anesthesiologists throughout the United States, and large number of these physicians have indicated desire for postgraduate continuation courses in anesthesia. The American Society of Anesthesiologists has encouraged its component societies to develop programs designed to meet the local demand and supplement the existing formal postgraduate courses. It will be the purpose of this exhibit to acquaint visiting physicians with the educational facilities available for both trained or untrained physicians and the physician practicing full-time or part-time anesthesiology

Viadril A Steroid Anesthetic Agent: Results in 1,000 Cases.

F Paul Ansbro, Albert E. Blundell, and Joseph C. Sweeney Jr., Brooklyn, N. Y and John W Pillion, Lawrence, Mass.

21-Hydroxy-pregnanedione sodium hemisuccinate (Viadril) has been used in 1,000 operations for many different surgical procedures. An evaluation of the drug has been made in the light of the data obtained from these cases, particularly in regard to safety potency and effect on laryngeal reflexes, respiration, and circulation.

Antisecretory Drugs.

John Adriani and William Trotti, Charity Hospital, New Orleans.

The accumulation of secretions in the respiratory tract is vexatious problem encountered in many phases of medical practice. In the comatose or anesthetized patient the problem is serious one because atelectasis or asphyxia may occur. Most secretions come from glands under autonomic (parasympathetic) control. For many years atropine has been used in attempts to minimize them. In spite of its universal acceptance and its wide usage, there are many drawbacks to the use of atropine. More recently other anticholinergic drugs have been introduced that possess antisecretory activity These have been studied and compared with atropine and other belladonna alkaloids in regard to efficiency as antisecretory drugs and side actions. The exhibit shows, by means of photographs, posters, and charts, an evaluation of available antisecretory drugs, their mode of action, their clinical efficiency, variations in efficiency according to dosage and route of administration, and the type of side-actions encountered. The drugs studied include levo-hyoscyamine, dextro-hyoscyamine, atropine, scopolamine, banthine, antrenyl, dibutine, pamine, trimicot, and aminotrona. The most efficient, with the least side-effects, are levo-hyoscyamine and scopolamine.

Narcotic Antagonists.

Francis F Foldes, L. Rendell-Baker, D. Bachman, L. R. Koukal, and A. A. Conte, Mercy Hospital, Pittsburgh.

The exhibit presents the chemical relationship between morphine and nalorphine on the one hand and between levorphan and levallorphan on the other. It discusses the usefulness of narcotic antagonists under the following headings: (1) treatment of accidental or intentional narcotic poisoning in adults, (2) treatment of narcotic poisoning in the newborn infant, (3) combination with high doses of narcotics for supplementation of nitrous oxide-oxygen anesthesia in surgery and obstetrics, (4) combination with narcotics to combat labor pain, and (5) diagnosis of addiction to narcotics.

The Use of a Steroid for Narcosis.

William S. Howland and J Weldon Bellville, N.Y.

The exhibit gives summary of animal investigations together with clinical experiments, pharmacology effects on the cardiovascular and respiratory systems, electroencephalogram patterns, and comparison with thiobarbiturates.

Epidural Anesthesia in General Surgery

P C. Lund and John C. Cwik, Conemaugh Valley Memorial Hospital, Johnstown, Pa.

This exhibit illustrates an improved modified pressure technique for the induction of epidural anesthesia that has additional safety features and other advantages. Briefly it illustrates our experiences in 3,800 epidural anesthetics by means of color transparencies, colored illustrations, graphs, and charts. It includes summary of the total series, age distributions, indications, contraindications, advantages, complications, and risks. The agents used and other pertinent information are also included. The various chemical techniques are described by means of color illustrations. Each individual step of this technique (i. e., advancement of the epidural needle through the various tissues) is illustrated by means of selectravision projector that automatically flashes enlarged semidiagrammatic Kodachrome color pictures for timed interval. Samples of the equipment required for single-dose and continuous epidural anesthesia as well as reprints are also displayed.

Physiological Treatment of Asphyxia Neonatorum.

William K. Bannister and David M. Little, Hartford Hospital, Hartford, Conn.

The exhibit consists of diagnostic explanation of the physiological mechanisms causing the onset of respiration in the newborn infant and the alterations of these mechanisms by pathological conditions. The do's and don'ts of resuscitation of the asphyxiated newborn infant are presented, as well as the step-by-step methods employed in resuscitation. A statistical analysis of resuscitative procedures performed at Hartford Hospital during 1955 is shown.

Dyclonine: A Topical Anesthetic with Antimicrobial Properties.

P A. Boyer Jr., B. B. Arnig, and H. J Florestano, Indianapolis.

The exhibit shows charts demonstrating (1) the structural formula with the ketone linkage, not found in other local anesthetics; (2) surface anesthetic activity and other pertinent pharmacological properties; (3) the in vitro antimicrobial potency which is greater than that of phenol; and (4) clinical utility and safety when used as topical anesthetic on the skin and mucous membranes as reported by investigators in several medical specialties.

The Evolution of Laryngoscopes for the Anesthesiologist.

Barnett A. Greene and Bernard S. Goffen, Brooklyn, N. Y

The many different laryngoscopes for the anesthesiologist are described, classified, and traced to their origins. Information and analysis are provided to permit the choice of an instrument in terms of the problems and needs of different situations. The possible direction of design for future instruments is indicated.

Methitural: An Induction Anesthetic Electrocardiogram Studies.

I. M. Riwin, St. Vincent's Hospital, Upper Montclair N. J and Max Block, Mountainside Hospital, Montclair, N. J

Continuous electrocardiographic tracings have been taken from the time of insertion of needle in the vein throughout the injection period and for two minutes after. The exhibit presents changes in rate and rhythm and tracing changes that have occurred.

Di-Ethyl Ether Analgesia.

Joseph F Artusio Jr., New York.

The history of the stages and planes of anesthesia and of the analgesic state are depicted. The various planes of the first stage are outlined, the indications for the analgesic state are put forth, and the results first 150 cases are tabulated.

Tuberculosis of the Skin.

ROBERT F TILLEY JOHN ADAMS JR., CHESTER N FRAZIER, and ROBERT GRIESEMER, Massachusetts General Hospital and Harvard Medical School, Boston, and GEORGE ODLAND, Seattle.

A group of patients with tuberculosis of the skin was treated with isoniazid. Long-term follow-up studies show the results of this therapy. A chart depicts the various investigative procedures employed in establishing the diagnosis. Before-and-after clinical photographs are included.

exhibit shows the effect of a relatively new drug against certain ' kin tuberculosis. Because this group of diseases is not very ı thi country we have had the opportunity to use medication / ɩ pe only

ı tw types, namely lupus vulgari and tuberculosis cutis verrucosa, th r pon e to isoniazid is dramatic visible improvement appearing withi a few weeks. The patient seems to be clinically cured in about ight w ek To date in these two diseases there have been no relapses. Bi psies at the end of isoniazid therapy showed no histological evidence of tuberculosi There was no response in two cases diagnosed as lupus miliaris disseminatu faciei. The response in four cases of erythema induratum was equivocal

The tre tment wa started early in 1952 and kept up for one year empirically The patient were watched for drug reactions: renal hematopoetic neurologic and hepatic None was noted. One patient developed some nau ea and vomiting on the daily dosage of 300 mgm. *but tolerated 200 mgm. a day*

Th treatment gi en in this erie of cases con isted of 100 mgm. of isoniazid by mouth thre tim s a day Prior to this form of medication ariou methods of treatm t had been u ed. *n ha been as effecti sa/ mpl as i oniaz d.*

LUPUS VULGARIS

BEFORE



Female Age 69 years – Duration of disease 53 years.

Areas of involvement – F ce neck and scalp

Prior therapy – Oi tments and lotions, radium. Ultra violet radiation. Cod Liver Oil, calcium, sil er nitrate strepto-mycin, plastic surgery

ISONIAZID

100 mg T I.D

for one year

AFTER



BEFORE



Male Age 67 years – Duration of disease 47 years.

Areas of involvement – Left ear and adjacent areas. Right knee.

ISONIAZID

100 mg T.I.D

for one year

Prior therapy – Silver nitrate ultra violet radiation, gold intravenously Nitric acid, curettage phenol ethyl hydrate bismuth plastic surgery *calciferol* streptomycin

AFTER



BEFORE



ISONIAZID

100 mg. T I. D

for one year

Male. Ag 83 years – Duration of disease 8–9 months.

Areas of Involvement – Left buttock

No prior therapy

AFTER



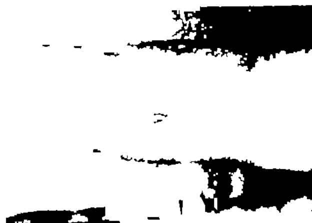
BEFORE



ISONIAZID
100 mg T.I.D.
for one year

Male Age 54 years – Duration of disease 6 months.
Area of involvement – Finger
No prior therapy

AFTER



CLINICAL ENTITY	LUPUS VULGARIS	TUBERCULOSIS CUTIS VERRUCOSA	ERYTHEMA INDURATUM	LUPUS MILIARIS DISSEMINATUS FACIEI
Number of cases	8	2	4	2
Skin biopsies consistant with disease before treatment	8	2	4	2
Chest x-ray compatible with old tuberculous infection	One showed old tuberculosis of left upper lobe	0	One showed calcification of lung consistant with Gohn complex	0
Clinical findings compatible with tuberculosis el ewhere	2 Scrofuloderma	2 Scrofuloderma	0	0
Positive reaction to tuberculin test				
O T 1/1000		1	1	
O T 1/10000	3	1	2	1
O T 1/100000	5		1	
P.P D. 1st strength				1
Number of guinea pig inoculated	6	2	0	0
Po iti guinea pig reactions	1	2		
Patients				
Clinically well to dat	8	2		
Partial improvement to date			4	
No improvement				2

Tissue impression tudie for acid-fast organism made in biopsy material from th four cases of erythema induratum wer all positi e. Culture of the same material using a variety of media and temperatures wer all negative.

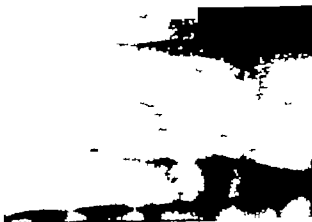
BEFORE



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AFTER

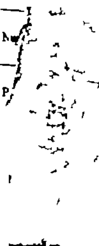


BASAL CELL EPITHELIOMA

a papule or nodule which slowly increases in ...lly erythematous and telangiectatic, progressing ...on, crusting and a rolled, pearly border Pigment may be present. They most often occur on ...lopsy is always advisable. Treatment See ...ell Carcinoma.

HISTOPATHOLOGY

Structure varies from solid islands to cystic or lacy formations but all are composed of ovoid cells which are more hyperchromatic than squamous cells.







SENILE KERATOSIS

Hyperkeratotic, yellowish brown lesions which vary considerably in size. Scale is usually dry and adherent. Most often on face and hands. Malignancy develops not infrequently; it should be suspected whenever there is accompanying erythema. Treatment Excision, electrofulguration or irradiation.

HISTOPATHOLOGY

Hyperkeratosis and acanthosis of the epidermis plus an infiltrate of plasma cells and lymphocytes in the upper part of the cutis. When malignancy develops, it is usually squamous cell carcinoma, but, rarely it may be basal.





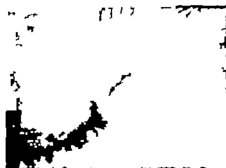


SEBORRHEIC KERATOSIS

Hyperkeratotic pigmented lesions which have a greasy scale. They have stuck on appearance and sometimes hav errucous surface. Tend to develop later in life. Usually seen on upper trunk and face. Must be differentiated from a pigmented nevus. Treated for cosmetic purposes only. Easily removed by fulguration and currettage or cryotherapy. They do not respond to irradiation.

HISTOPATHOLOGY

Lesion may be flat or raised, but in any case there is invagination of epithelium with cyst formation. Marked melanin pigmentation of the basal and dendritic cells. Hyperkeratosis is present superficially and in the cysts.







XANTHELASMA

Yellow to red papules which vary from a few mm. to 1 cm. or more in diameter occurring in the skin of the eyelids. Blood lipids are elevated in a large percentage of these cases and cardiovascular disease may be present. The lesions may be removed surgically but new ones are likely to occur.

HISTOPATHOLOGY

Typical of the entire xanthoma group the predominant feature being the presence of xanthoma or foam cells containing lipids which are responsible for the yellow color seen grossly.





GRANULOMA PYOGENICUM

Erythematous, pedunculated tumors varying from a few mm. to 1 cm. or more in diameter. Crusting and purulent secretion are sometimes present. Tend to occur at sites of injury. Most often on the extremities or face. They may respond to antibiotic ointments. If not, excision and fulguration are indicated.

HISTOPATHOLOGY

Typical picture is that of granulation tissue with proliferation of capillaries and infiltration with all types of inflammatory cells. Older lesions show advanced proliferation of fibroblasts and atrophy of capillaries, with loss of vascularity and cellular infiltration.





CHONDRODERMATITIS NODULARIS CHRONICA HELICIS

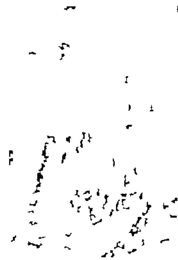
Well defined inflammatory nodule usually few mm. in diameter and covered with an adherent scale. The nodules vary from skin color to red or yellow. They are painful to pressure and usually located on the helix of the upper portion of the ear. Etiology not known. It is necessary to remove portion of the cartilage to prevent recurrence.

HISTOPATHOLOGY

Nonspecific chronic inflammation of the subcutaneous tissue with edema, degeneration of collagen and elastin, and vascular proliferation. Thickening of the perichondrium and degenerative changes of the cartilage.







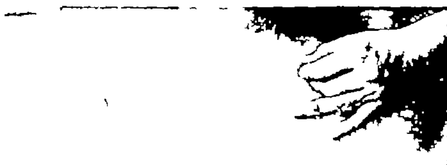
Courtesy Department of Dermatology
University of Michigan

GRANULOMA ANNULARE

Papules or nodules which tend to be grouped in a ring. These are firm, deep seated and usually skin colored; seen on hands, wrists, elbows, neck, feet, ankles, and buttocks; occasionally on other portions of the body. They most often occur in children and young people. Asymptomatic; etiology not known. Usually they disappear spontaneously sooner or later.

HISTOPATHOLOGY

Varying stages of collagen degeneration within the corium plus deposits of mucin. Inflammation and stellate arrangement of fibroblasts peripherally.





MILKERS' NODULES

Usually solitary nodules which occur on the hands or other portions of the skin exposed to the cow udder. The nodules vary from a few mm. to a few cm. in diameter and are quite inflammatory. Type of lesion and history of contact make diagnosis. Lesions are produced by a virus which is very similar to vaccinia. They undergo spontaneous involution within several months.

HISTOPATHOLOGY

Histologic changes not diagnostic. Early infiltrate of polys, later predominantly lymphocytes and plasma cells with occasional giant cells. New capillaries form in the inflammatory area.







NEVUS PIGMENTOSUS

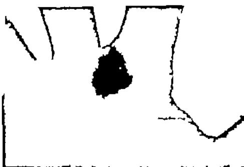
These appear on the skin in a wide variety of color size and elevation. They vary from few mm. in diameter to lesions covering large part of the trunk. They are given various names depending on the presence of hair, character of the surface, etc. The junction nevus belongs in this group. It is usually dark colored, flat and non hairy Pigmented basal cell carcinoma and melanomas must be differentiated from this group. If nevus is in an area where it is constantly traumatized it should be treated. The soft papular or pedunculated hairy nevi may be partially removed by electrofulguration for cosmetic purposes with little danger. The junction type, if treated, should be excised for biopsy Treatment of the "in between nevi is more controversial. If there is any doubt about the treatment of choice, excision and biopsy is advisable.

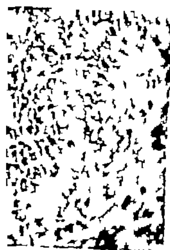
HISTOPATHOLOGY

Nevus cells are oval or cuboidal with large vesicular nuclei. They are arranged in clusters beneath a relatively normal epithelium. Pigment, when present, tends to be near the epidermis. Junction nevi show marked degree of cellular activity of the epithelial cells at the junction of epidermis and dermis, usually with pigmentation.



Courtesy Department of Dermatology University of Michigan





MALIGNANT MELANOMA

The possibility of melanoma should be ruled out whenever there is darkly pigmented nodule or papule on the skin which has increased in size. Melanomas are most common on the face, hands or feet. Treatment of choice wide excision of the melanoma. Removal of the regional nodes must be decided upon in each case.

HISTOPATHOLOGY

The tumor is histologically invasive and is typically made up of large polyhedral cells. They usually contain melanin but there may be little or no pigment in some tumors or their metastases.





Courtesy Department of De[rmat]ology
Universit[y] of Michigan

CAPILLARY NEVI (PORT WINE MARK)

Flat erythematous are[as] varying widely in size and shape. Erythema disappears on diascopic pressure. Most frequent on back of neck but may be seen on any portion of the body. Satisfactory therapy difficult. "Cover Mark" will conceal the lesions very effectively. Thorium X ... are satisfactory in some cases. Continual ... or radium are contraindicated.

HISTOPATHOLOGY

A group of vessels containing blood which usually is located in the dermis but may also extend into the subcutaneous tissue.

OGY
tion w
rmatic
rally





Courtesy Department of Dermatology
University of Michigan

NEVUS ARANEUS (SPIDER NEVUS)

Small vascular papule from which telangiectatic vessels radiate simulating the legs of a spider. Diascopic pressure results in blanching. Most frequently seen on the face. Easily treated by electrolysis.

HISTOPATHOLOGY

Not characteristic. Dilated vascular channels are the chief feature.



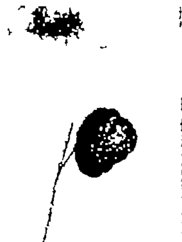


SENILE ECTASIAS

Erythematous papules few mm. in diameter which are rather difficult to blanch on diascopic pressure. Occur most commonly on the trunk of elderly people. May be removed by electrofulguration for cosmetic purposes.

HISTOPATHOLOGY

Consist of dilated capillaries resembling capillary hemangioma.





Courtesy Department of Dermatology University of Michigan.



CAVERNOUS HEMANGIOMA

Vary in character and color depending on the depth. Superficial lesions are bluish red, frequently with an irregular surface. Deeper tissues may also be involved. Usually develop soon after birth. Hemangiomas may be temporarily reduced by pressure. Many of these lesions disappear spontaneously between 2 and 6 years of age. If there are measurable signs of growth, treatment depends on the method with which the physician is most familiar. W prefer gamma rays of radium or x-rays, depending on the size and depth.

HISTOPATHOLOGY

Usually located in the upper corium, readily recognized in the typical form as vascular spaces lined with endothelium and containing blood.





Courtesy Department of D[illegible] University [illegible]

CAPILLARY NEVI (PORT WINE MARK)

F[illegible] in size and shape. [illegible] Most fre- [illegible] can be seen on any portion of [illegible] Covermark [illegible] very effectively. Thorium [illegible] satisfactory in some cases. Con- [illegible] are contraindicated.

HISTOPATHOLOGY

A group of vessels containing [illegible] located in the corium but not subcutaneous tissue. [illegible]





Courtesy Department of Dermatology University of Michigan

NEVUS ARANEUS (SPIDER NEVUS)

Small central point from which telangiectatic vessels radiate simulating the legs of a spider. Diathermy [illegible] results in [illegible]. Most frequently seen on the face. [illegible] treated by [illegible].

HISTOPATHOLOGY

Not characteristic. Dilated vascular changes are the chief feature.

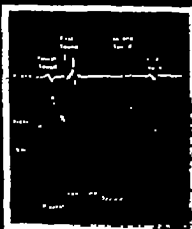
Certificate of Merit

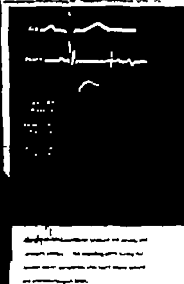
Patterns of Cardiovascular Pressure Pulses
Obtained by Catheterization.

ALDO A. LUISADA and C. K. LIU Chicago Medical School
Chicago.

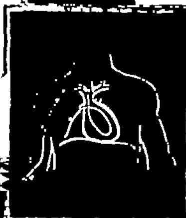
An improved method of obtaining pressure pulse from the heart and vessels was successfully employed. It is based on the use of photographic recording, high-speed film, full utilization of the amplifying power of any electromanometer and simultaneous tracings of phonocardiogram. With this method tracings of the ... as right atrium and ventricle, *pulmonary artery* and wedged P. A. tracings were recorded in normal men and normal dog. Simultaneous pressure tracings and EKYs of

ASCULAR PHYSIOLOGY
RT CATHETERIZATION



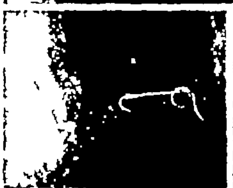




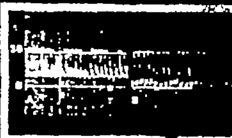




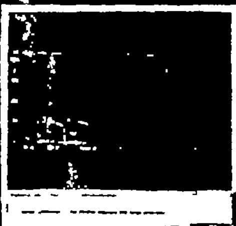
SLOW SPEED TR…
SCHEMES OF PRESSURES

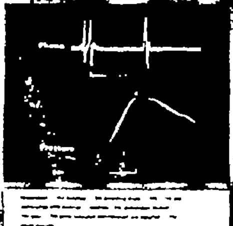




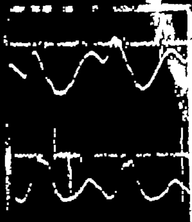


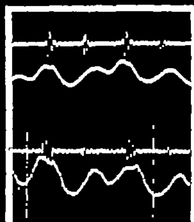


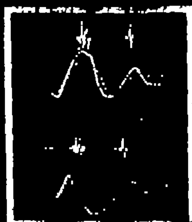


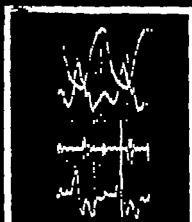


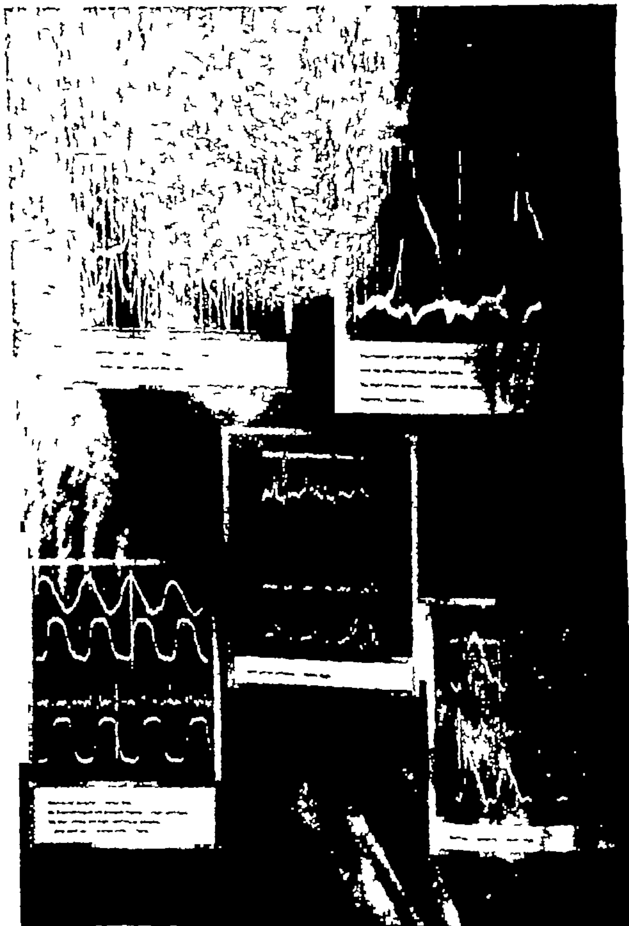
URE PULSES
ATRIUM
VENAE CAVAE







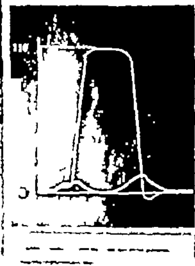


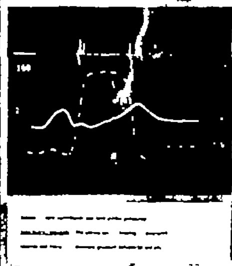


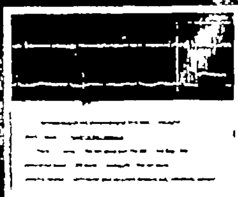
K. POLNONIC,
DGE PULSES.

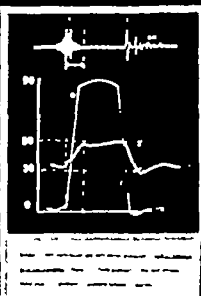
1st 2nd

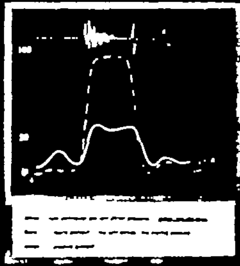
LEFT ATRIAL AND LEFT [illegible] PULSES IN MITRAL VALVE D[illegible]















EXPERIMENTAL MITR[illegible] NSU[illegible] SCHEMES OF PRESS[illegible]E GRA[illegible]IE[illegible] VALVULAR STENOSIS

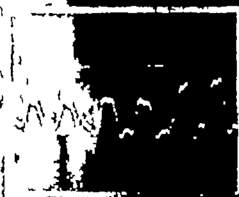


RIGH RIAL

RICULAR PULSES

SES

ABNOR VAL TRICULAR P

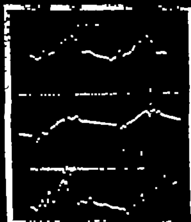


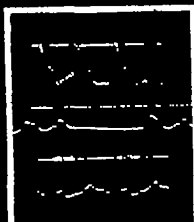


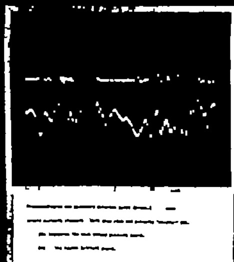


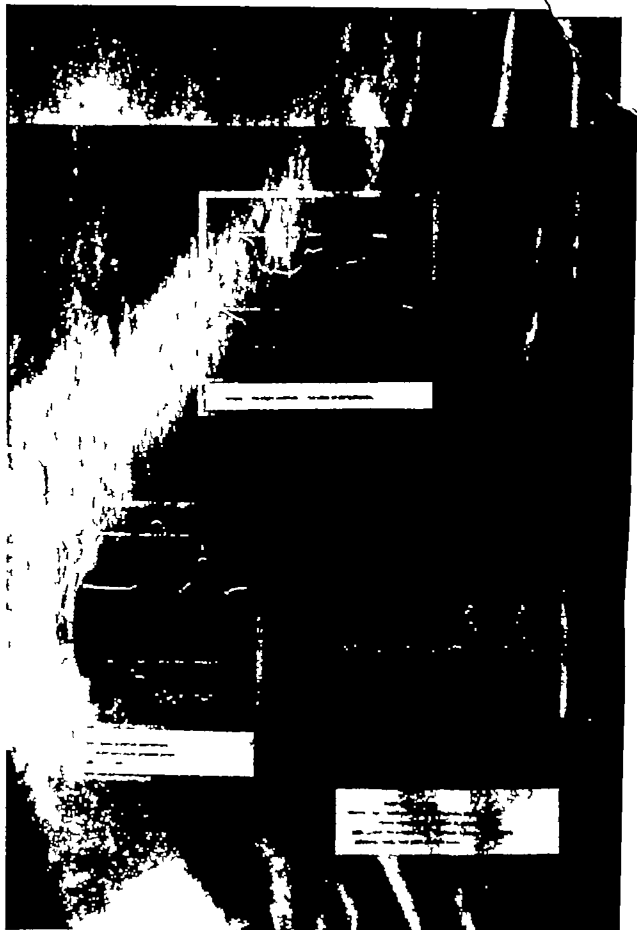
PULSES

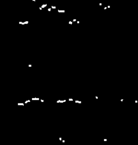


















Mitral Insufficiency: Correction by Polar Cross Plication of the Annulus Fibrosis.

Henry T Nichols, Clarence Denton, and Joseph F Uricchio, Hahnemann Medical College Philadelphia.

A variety of methods for the surgical correction of mitral insufficiency has been proposed by this group. After the initial attempt, gradual improvements were made and the present technique evolved and is presented. This method consists of approximating the posterolateral aspect of the AV annulus. This simple method succeeds in bringing into

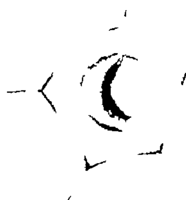
P A T H O L O G Y



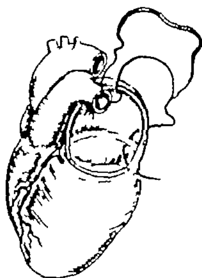
Type 1 Scarred and retracted leaflet



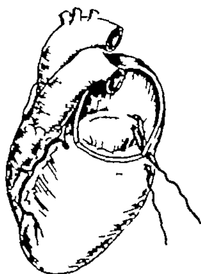
Type 2 Scarred and retracted chordae



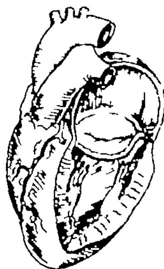
Type 3 Dilatation of atrio ventricular ring



Placement of suture



Suture in position



Suture tied outside of heart

PRINCIPLES OF SURGERY

1 Leaflets approximated so they make contact during systole

2 Sutures placed to include substance of mitral annulus at two selected points on septal and mural portions respectively - annulus is only available structure capable of holding sutures under tension

3 Leaflet action not compromised

4 Physiological stenosis not produced cross sectional area at valve annulus considerably greater than at valve orifice

5 Permanence of polar cross-fusion insured by

(a) Non-absorbable suture (80 # Test Braided Dacron)

(b) Bulk of suture plus pericardial cushion (guards against cutting through)

(c) Fibrous bridge between approximated areas of annulus (pericardial encasement of Dacron suture)



Case M S Pre-op scout film needle in left ventricle



Case M. S Pre-op diodrast injection into left ventricle dye entering left atrium



Case M. S Post op scout film needle in left ventricle



Case M. S Post-op diodrast injection into left ventricle

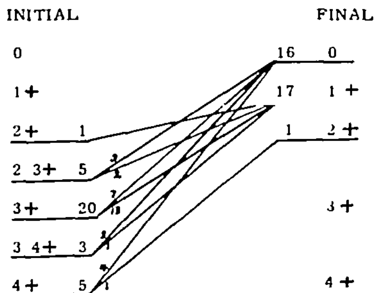


Case L S Pre-op teleoroentgenogram



Case L S Post-op teleoroentgenogram

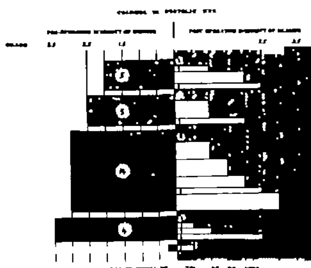
ESTIMATED M I AT SURGERY



CLINICAL RESULTS

Total Cases Operated	34
Deaths	5
Mortality	14 7%

No Deaths Occurred in Operating Room
No Cases of Cardiac Arrest During Surgery
1 Case of Ventricular Fibrillation During Surgery (restored)



CAUSES OF DEATH.

1 Occlusion of Right Coronary Artery (avoidable by present techniques)

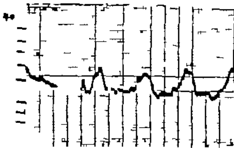
2 Associated Aortic Stenosis and Aortic Insufficiency

3 Hypotension (occurred during thoracotomy and continued for 7 hours post-operatively)

4 Head injury (33 days post operatively)

5 Bacterial Endocarditis

C L I N I C A L   R E S U L T S





PRE OP

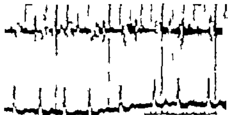




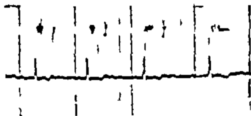
POST-OP

Left atrial tracing by cardiac catheterization

PRE OP



POST-OP



Phonocardiograms

Special Exhibit on Pulmonary Function Testing

The Special Exhibit on Pulmonary Function Testing is presented by the Section on *Diseases of the Chest.* It has been developed and continued with the help of many individuals, under the auspices of the following General Committee and representatives of Government Services:

George R. Meneely, Nashville, Tenn., Chairman.
Albert H. Andrews Jr., Chicago.
Alvan L. Barach, New York.
Ben V. Branscomb, Birmingham, Ala.
Robert A. Bruce, Seattle.
James J. Callaway, Nashville, Tenn.
David W. Cugell, Chicago.
Ward S. Fowler, Rochester, Minn.
Edward A. Gaensler, Boston.
Burgess L. Gordon, Philadelphia.
Ross C. Kory, Wood, Wis.
John A. La Due, New York.
Edward H. Lanphier, Washington, D. C.
Edwin R. Levine, Chicago.
Aldo A. Luisada, Chicago.
Ross McLean, Baltimore.
Joseph M. Merrill, London, England.
Hurley Motley, Los Angeles.
Frank Princi, Cincinnati.
John J. Sampson, San Francisco.
John H. Seabury, New Orleans.
Maurice S. Segal, Boston.
William W. Stead, Minneapolis.
Peter A. Theodos, Philadelphia.
J. F. Tomashefski, Columbus, Ohio.
Donald S. Tysinger Jr., Dothan, Ala.
Roger Wilson, San Francisco.

Representatives of Government Services:

W. Clark Cooper, Cincinnati, U. S. Public Health Service.
Martin M. Cummings, Washington, D. C., Veterans Administration.
Ashton Graybiel, Pensacola, Fla., U. S. Navy.
James Weir, Denver, U. S. Army.

The exhibit emphasizes practical problems in the establishment of a "lung station" suitable for a hospital or clinic, i. e., a laboratory designed to aid in diagnosis, prognosis, therapy and the evaluation of disability in pulmonary disease in much the same manner that a "heart station" serves the needs of clinicians concerned with heart disease.

Emphasis is placed on equipment that is of low initial cost; that does not require extensive shop work to modify, assemble, and maintain; and that has withstood the test of time. Methods used are sufficiently simple to be mastered by physicians and technicians without long periods of specialized training and are rapid in the interest of adequate patient turnover. Previous training and the individual preference of the responsible physician are important factors in the selection of equipment and methods.

There will be actual demonstration of equipment by physicians experienced in pulmonary function testing. (The inclusion of any piece of commercially available apparatus in this exhibit does not necessarily constitute an endorsement of that particular piece in preference to a similar piece produced by another manufacturer.)

The exhibit will be demonstrated by various members of the Committee and other volunteers. A list of those aiding in the demonstration and the hours at which they will be present will be posted in the exhibit. The names of those demonstrating at any particular time will be prominently displayed.

Antimicrobial Therapy in Tuberculosis.

Francis J. Murray, Tuberculosis Program, U. S. Public Health Service, Washington, D. C.

The exhibit presents a graphic comparison of x-ray changes, sputum conversion, and bacterial resistance among patients treated in [illegible] hospitals with seven combinations of streptomycin, *PAS, and isoniazid.* This is a cooperative clinical investigation coordinated by the Tuberculosis Program, U. S. Public Health Service, Washington, D. C.

Activation of Tuberculosis by Corticosteroid Therapy

George S. Berg, William Lester, E. A. [illegible], and Eli Shulruff, Suburban Cook County Tuberculosis Sanitarium, Hinsdale, Ill.

This exhibit includes x-ray films and clinical histories demonstrating the reactivation of tuberculosis in individuals under corticosteroid therapy. The common everyday use of corticosteroids for many clinical conditions such as rheumatoid arthritis, asthma, and allergies should be routinely preceded by x-ray films of the chest to rule out previous known or unknown tuberculosis activity.

Tuberculosis Today

Albert R. Allen and James K. Yu, Central Washington Tuberculosis Hospital, Selah, Wash.

Three hundred thirty consecutive patients with proved tuberculosis, admitted over a three-year period and treated with continuous and concurrent streptomycin, para-aminosalicylate, and isoniazid, plus early surgery when indicated, are reported on here. These cases cover all types of tuberculosis—primary reinfection, pulmonary and extrapulmonary. One hundred forty-two patients were operated on: there were 120 pulmonary resections, 17 with bone tuberculosis, 2 nephrectomies, and 3 with ureteral stenosis; 3 died from postoperative complications within the first 30 postoperative days. All but two have been discharged and only two have reactivated, one with pulmonary disease who was resected again, and one with renal tuberculosis. The other 188 were treated with combined drug therapy. Six deaths due to tuberculosis occurred in this group, five in children under 4 years of age with meningitis. Representative cases of each type of disease are shown, with x-rays and colored pictures of pathology. Our mortality in the entire series is 2.7% with treatment failure in another 1.2%

Missed Diagnoses.

Julius L. Wilson, National Tuberculosis Association, New York.

The exhibit includes the case histories of patients with pulmonary ailments, complete with x-ray film. The doctor can make the diagnosis, then, he can check himself by lifting the lid to see whether he hit or missed the diagnosis. The cases presented avoid the obvious and represent difficult or unusual diagnoses.

The reactivation rate is only 5%, in spite of returning all patients to their previous occupations immediately after discharge regardless of physical exertion involved. If technically possible, all reactivations have been resected and only one remains hospitalized; thus successful treatment has been achieved in 96% of all cases with all patients discharged a year or more.

Further Studies on the Use of the Corypin as a Skin Testing Medium.

Harry [illegible], Philadelphia, and Harry Corper, Derby, Colo.

The Corypin, a simplified, stable method for skin testing for tuberculosis and histoplasmosis, is compared to present-day methods of skin testing. Further studies on coccidioidomycosis and blastomycosis are presented. Intensive work on its application to allergen testing with controls are also shown. The exhibit, in addition to showing the actual plan for testing, is supplemented with colored photographs of typical reactions and with a historical record of other methods of skin testing.

Bronchial Adenoma.

O. H. Friedman, Coleman B. Rabin, and B. [illegible], New York.

The exhibit consists of a demonstration of the pathological and radiological features of 15 cases, including [illegible] distinct metastases. Criteria for the differentiation from [illegible] disease are demonstrated. The incidence of the [illegible] form and results of bronchoscopic and surgical treatment [illegible]

The Use of Mechanical Respirators by the Anesthetist, Surgeon, and Internist.

E. Trier Morch, Edward R. Avery, Geraldine Light and John Cunningham, Chicago.

Mechanical respirators for use in anesthesiology and many other medical fields ... simplified but also the design needing little maintenance ... adjustable ... positive and positive negative pressures ... constant ... proper pressure profile to provide good ventilation ... and ... of patients and adjusting ... for easy cleaning and management by any nurse or doctor ... used for respiratory insufficiency due to ... (bulbar poliomyelitis, brain injuries, cerebral vascular ... pulmonary insufficiency (preoperative and postoperative ... emphysema or pulmonary disease) and damage to ... respiratory mechanism (including injuries of chest wall ... nerve groups).



... Therapy

... Jr., Respiration Laboratory, St. Luke's H... Chicago.

... evaluated by the Recording ... meter and records oxygen ... room temperature, relative humidity ... Also, other ... and inhalation therapy ... results of these studies are presented ... recognized. The principles ... these deficiencies ... Therapy Analyzer and the ...

... Mitral Insufficiency

... W. Hayes Jr., Robert Kunin, ... Kowalski, Temple Hos...

... muscular support from ... required by ( ) plication ... of the annulus by inserting ... and the coronary ... of the defect ... both pr... of the operation ... physiological studies ...

... Robert G. Trout ...

... percentage of the ... has been studied experimentally ... the anatomic basis for ... for its performance ... procedure ...

... mediums that outlines the bronchial tree in bold alveolar filling and ... retention. This mixture ... diagnostic bronchography in 1953 and has ... used throughout Western Europe ... suspension for 200 bronchograms since April, 1953 ... made with this ... other ... demonstrated.

After Myocardial Infarction: The Functi... Circulatory Consequences.

George R. Meneely, Con O. T. Bal... Jr., Vanderbilt University Sch... Ormond B. Dedmond, R. ... Thomas, Meharry Medical Co...

The interplay of compensatory and decompe... events following acute myocardial infarction ... the ... for ... the ... complications such ... thromboembo... the question. After an infarction, ... and timing of these ... statistical analysis, following the scheme ... case ... 200 ... patients ... of hypodynamic ... death from ... or failure and ... to return to ... comparing survival after ... 10-year peri... of similar ages ...

Experimental Method for Producing a ... to the Heart Di... ly from the Left Ven...

Alfred ... Martin ... Shu Chang, J. M. Kami... Sherman H. Sie..., and ... of Hope Medical Cen... Dua...

... describes ... experimental methods ... directly from the left ... communication ... shaped arterial ... artery. The method has ... methods ... These methods ...

Physiological and Horm... al Therapy in Pulmonar...

Geri...

Special E

The Special Exl
sented by the Sec
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representatives of (

Groscm S
Albert H
Alvan L
Ben V Br
Robert A
James J Ca
David W C
Ward S. Fo
Edward A. C
Burgess L. G
Ross C. Kory
John A. La D
Edward H. L
Edwin R. Le
Aldo A. Luisa
Ross McLean,
Joseph M Me
Hurley Mot
Frank Prince,
John J. Sampi
John H. Star
Maurice
William
Peter A
J F To
Donald
Roo

Rer

Malignant Carcinoid, a New Metabolic Disorder

Albert Sjoerdsma, Luther L. Terry and Sidney Udenfriend, National Heart Institute, Bethesda, Md.

This exhibit describes a relatively recently recognized clinical syndrome with interesting metabolic derangements. The associated laboratory findings point out the nature of the metabolic defect in tryptophan metabolism and characterize the syndrome. The exhibit shows illuminated photographic transparencies of a patient with this syndrome during one of the characteristic flushes. A control photograph is also presented for comparison. The characteristic clinical findings, laboratory findings, and histology of the tumor are also shown. A small leaflet presenting the important aspects of this exhibit is available for distribution at the exhibit.

CLINICAL FEATURES



1. VASOMOTOR DISTURBANCES
superficial vasoconstriction
cutaneous flushes and cyanosis

2. CARDIAC INVOLVEMENT
endocardial and valvular lesions

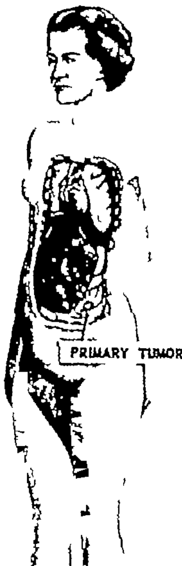
3. BRONCHOCONSTRICTION
cough dyspnea wheezing

4. HEPATOMEGALY
large nodular liver

5. INTESTINAL HYPERMOTILITY
cramps diarrhea vomiting

6. RHEUMATOID ARTHRITIS (?)
noted but not clearly part of syndrome

7. ABSENCE OF HYPERTENSION



Use of Mechanical Respirators by the Anesthetist, ...ton, and Internist.

E. Trier Morch, Edward E. Avery, Geraldine Light and John Cunningham, Chicago.

...echanical ...espirators, for use in anesthesiology and many other ...cal fields, ...ll [illegible] simplified but durable design needing little ...tenance, adjustable rate, volume and positive-negative pressures; ...tant air & volume proper pressure profile to provide good ventila... without ...ecol tory interference and ... minimum of gadgets and ...ments to ...llow for easy learning and management by any nurse ...doctor. The respirators are used for ventilatory insufficiency due ...central nervous system damage (bulbar poliomyelitis, brain injuries, ...ebral vascular accidents), pulmonary insufficiency (preoperative and ...operative ...ases ...th advanced emphysema or pulmonary disease), ...d dam ge to peripheral respiratory mechanism (crushing injuries of ...est, ...all diaphragm, and myasthenia gravis).

...xygen Tent Therapy

Albert H. Andrews Jr., Respiration Laboratory, St. Luke's Hospital, Chicago.

Oxygen tent therapy has been critically evaluated by the Recording ...halation Therapy Analyzer ...hich measures and records oxygen con...centrations, carbon dioxide concentrations, temperature, relative humidity, ...xygen flow rate ...nd the patient's pulse rate. Also, observations and ...nterviews with patients, physicians, nurses, and inhalation therapy ...echnicians have been utilized. The results of these studies are presented, ...nd deficiencies in oxygen tent therapy are recognized. The principles ...of oxygen tent design and operation developed to correct these deficiencies ...are presented. The Recording Inhalation Therapy Analyzer and the experimental ... ...ten tent are demonstrated.

Surgical Correction of Mitral Insufficiency

Victor P. Satinsky, E. W. Hayes Jr., Robert Kohn, Lauro deVera and E. V. Kontrantez, Temple Hospital, Los Angeles.

...ficiency is produced by removing muscular support from ...tion of the annulus. It may be corrected by ( ) plication ... (b) forward displacement of the annulus by inserting ...ificinous prosthesis bet...een the annulus and the coronary ...il...ation of the left ventricle in the region of the defect. ...tients are accompanied by catheterization studies both pre-... and postoperatively. Colored pictures of the operative pro-...s ... ...ll as the graphs reflecting the physiological studies will ...demonstrated.

Surgery of Mitral Insufficiency

Robert P. Glover, Julio C. Davila, Robert G. Trout and O. Henry Janton, Philadelphia.

The concept of circumferential constriction or purse-stringing of the cardiac valves for the relief of insufficiencies has been studied experimentally. The rationale of its application and the anatomic basis for such procedure have resulted in ... surgical technique for its performance that is both feasible and safe. The advantages of this procedure include the fact that this operation does not require the introduction of foreign material across the lumen of the cardiac chambers. It also involves no more intracardiac ma...pulation than does ... commissurotomy and results in no ...ignificant myocardial trauma. This principle ... ...ith or without concomitant commissurotomy appears applicable to most forms of mitral insufficiency. This exhibit depicts the pathology and physiology of the lesion under question, the technique of the operative approach, the three-year experimental background, and its more recent clinical application.

Bronchography Using Sulfanilamide-Lipiodol Suspension.

John E. Rayl and Warren C. Evans, Veterans Administration, Oteen, N. C.

...ince 1922 lodized ... ...it has been the contrast medium commonly used in bronchography. Alveolar filling, ...ith ... residual persistence of ...articles in the ... ...best ... however has been ... serious disadvantages. Since 1948 numerous unsuccessful attempts ha... been made to develop ...satisfactory ... ...eceptable material that would be rapidly eliminated. The addition of sulfanilamide powder to the iodized oils results in ...

...medium that outlines the bronchial tree in bold c... alveolar filling and ...ol... ...mination. This mixture ...diagnostic bronchography in 1951, and since then ...used throughout Western Europe. W... ...ha... ...use suspension for 700 bronchograms since April, 1955 ...grams made ...th this su... ...ell as other contrast ...ustrated.

After Myocardial Infarction: The Functio... Circulatory Consequences.

George R. Meneely, Con O. T. Bal... Jr., Vanderbilt University Sch... George B. Brothers, R. S... Thomas, Meharry Medical Co...

E - OP

The interplay of compensatory and decompe... events following acute myocardial infarctio... the future holds in store for all but the f... current complications such as thromboemb... the question. After an infarction, ...hat ... and timing of these functional circulatory ... statistical analysis, following the schema ... tates in some 300 hospitalized patients the h... of hypodynamic circulation; early ...nterme... death from arrhythmia or failure and foll... to return to usual or higher activity ...p... comparing survival rates for ... 10-year peri... of similar age, sex, and race.

Experimental Methods for Producing a ... to the Heart Directly from the Left Ven...

T - OP

Alfred Goldman, Martin Chand... En Shu Chang, L. M. Ramirez, Sherman H. Strauss, and Myr... of Hope Medical Center, Duarte, ...

This exhibit describes experimental methods in dogs ... the coronary circulation directly from the left ventricle by ... ...ce communicating U-shaped arterial grafts obtained from the ...arotid artery. The method has been evaluated by (1) survival ...anterior descending coronary artery ligation, (2) biochemical ...minations of free amino acids by paper chromatography, (3) histol... methods, including injection of India ink, comparative ...ights and ...of experimentally produced infar...ts, and of electrocardiographic me... These methods are depicted in the ...hibit.

Physiological and Hormonal (Prednisone) Therapy in Pulmonary Emphysema.

Gustav J. Beck, Hylan A. Bickerman, Mato Marinovich and Alvan L. Barach, Columbia Presbyterian Medica... Center and Goldwater Memorial Hospital, New York.

Among the factors responsible for the ventilatory disturbance in pulmonary emphysema, expiratory bronchial constriction is generally of paramount importance. Its relief by physical aids ... be presented especially th... use of continuous pressure breathing, by means of which bronchial narrowing in expiration is prevented. A similar effect is chemically produced by bronchodilatation achieved with the use of adequate prednisone therapy. These effects will be illustrated by suitable charts.

Eight Years' Experience with Pulmonary Biopsy

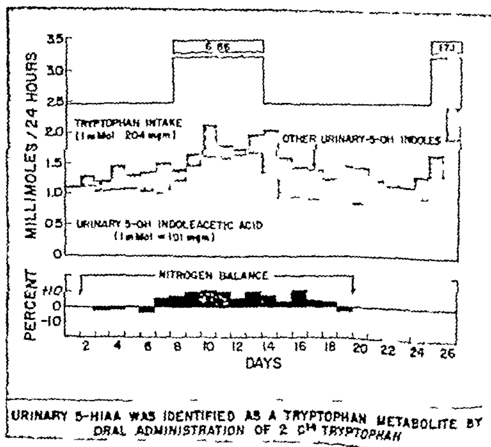
Neil C. Andrews and Karl P. Klassen, Ohio State Medical Center, Columbus, Ohio.

Pulmonary biopsy through ... small submammary incision has been used in the diagnosis of obscure diffuse pulmonary lesions in 118 patients during the past eight years. Only those in ...hom the diagnosis could not be made by other methods were subjected to biopsy. The methods of investigation prior to biopsy, the technique of the procedure, the findings at biopsy, and the complications are presented. Eleven cases illustrating various types of lesions are presented with ...ts, pertinent findings, and photomicrographs of the resected ...ssue.

SEROTONIN AND ITS METABOLITES IN CARCINOID PATIENTS

		Blood Serotonin µgm/ml	Urine 5 HIAA mgm/24 hrs	Total Urine 5 OH Indoles mgm/24 hrs
NORMALS		0.1 0.3	2 9	
MALIGNANT CARCINOID	I	2 5	320 392	453
	II	2 4	180	244
	III	0 5 1 5	240 280	345 385
	IV	2.2	28	–
	V	1 2 1 9	380 580	460 865
	VI	–	248	322
	VII	1 7 2.7	214 572	336 640

RELATIONSHIPS TO DIETARY TRYPTOPHAN



URINARY 5-HIAA WAS IDENTIFIED AS A TRYPTOPHAN METABOLITE BY ORAL ADMINISTRATION OF 2 C[14] TRYPTOPHAN

SUMMARY

Elevation of blood serotonin and urinary 5 HIAA (serotonin metabolite)

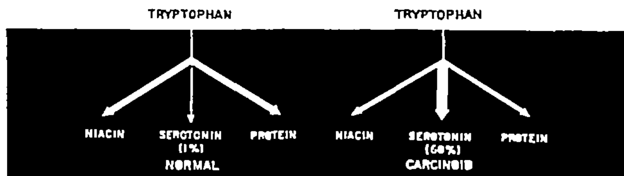
Large amount of serotonin in carcinoid tumor and presence of enzymes required to form and metabolize serotonin

First proof in man of precursor relationship of tryptophan to 5 OH Indole compounds

Confirmation of minimal daily tryptophan requirement in man being 150 200 mgm.

CLINICAL AND METABOLIC IMPLICATIONS

COMPARISON OF TRYPTOPHAN METABOLISM IN NORMAL AND CARCINOID PATIENTS



CORRELATION OF CLINICAL AND METABOLIC FINDINGS

1 Overproduction of Serotonin

This naturally occurring amine is known to have a potent action on smooth muscle It may be directly responsible for the cutaneous flushes asthma and tissue substance

2 Deficit of other Tryptophan Metabolites

a. Niacin Deficiency: cutaneous lesions of pellagra noted in several cases.

b. Protein Deficiency: loss of weight and tissue substance

3 The combined effect of 1 2a and 2b should be considered in any explanation of the pathophysiology particularly with regard to the endocardial and valvular heart lesions, which are late manifestations of the syndrome

The Action of Mercurial Diuretics and the Fractionation of Excretory Products.

Carroll A. Handley, John H. Moyer, and R. A. Seibert
Baylor University College of Medicine, Houston, Texas.

This exhibit is concerned with the dosage response to orally given chlormerodrin and acetazolamide and to parenterally given meralluride in patients with congestive heart failure. Diagrams show the site of action on the nephron and the changes in electrolyte excretion induced by chlormerodrin. Diagrams illustrate method for separating the excretory products from meralluride administration and the rates of excretion of these products.

THERAPY

In the drug therapy of heart failure, the therapist may select agents which

1. Act directly improving cardiac function (cardiac glucosides)

2. Act directly on the kidney, increasing electrolyte and water excretion with secondary improvement of cardiac function (diuretics)

PROBLEM

In heart failure there is a decrease in cardiac output which results in reduced renal blood flow and glomerular filtration rate

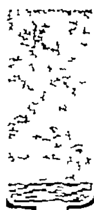
These reductions in the <u>supply</u> to the nephron are accompanied by retention of sodium chloride, and water resulting from increased reabsorptive activity in the renal tubule. These decreases in <u>supply to the nephron</u> and <u>excretion by the tubule</u> combine to produce retention edema.

THIS EXHIBIT IS CONCERNED PRIMARILY WITH THE EFFECTS OF MERCURIAL DIUR[illegible]TS

ORGANIC MOLECULE OR INORGANIC MERCURY ?

In what form are the organomercurials active ? Little work has been done on this problem According to popular conception the body removes mercury from the organic compound and this inorganic mercury produces the diuresis In the case of Mercuhydrin at least, this [illegible] not true Almost all of the Mercuhydrin is exc[illegible]ted as the organic compound The small remaind[illegible] excreted as Mercuhydrin degradation products, is insufficient to account for the diuresis

ADSORPTION CHROMATOGRAPHY METHOD USED FOR SEPARATING THE EXCRETORY PRODUCTS OF MERCUHYDRIN



METHOD

The urine containing the ex[illegible]retory products from the mercurial [illegible] introduced into chromatography column packed [illegible] acid aluminum [illegible]

MERCURY AS DEGRADATION PRODUCTS OF MERCUHYDRIN

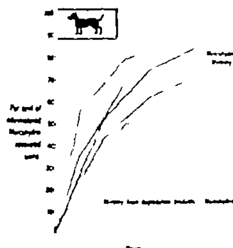
A small fraction of modified Mercuhydrin can be washed [illegible]rough the part or column by [illegible] The mercury [illegible]

MERCURY AS MERCUHYDRIN

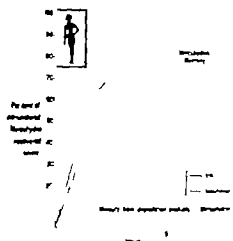
A major [illegible] of the Mercuhydrin [illegible] trapped [illegible]

MERCUHYDRIN EXCRETION

MERCUHYDRIN EXCRETION IN 8 DOGS



MERCUHYDRIN EXCRETION IN 6 PATIENTS



THE FATE OF SODIUM IN THE RENAL TUBULE



NORMAL SUBJECT

For every 100 cc of glomerular filtrate, 99 cc of water and 99 % of the sodium is reabsorbed by the renal tubules

HEART FAILURE

Sodium and water reabsorption are increased

ORGANOMERCURIAL DIURETICS

Produce reversible inhibition of renal tubular mechanisms for reabsorption of sodium and chloride

PROXIMAL TUBULE

Active [illegible]

Na^+

K^+

[illegible]

[illegible]

[illegible]

99 % Na and H_2O [illegible]

99.8 % Na^+ and H_2O [illegible]

99 % Na^+ and H_2O [illegible]

THIN SEGMENT

DISTAL TUBULE

[illegible]

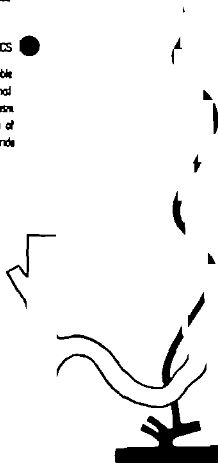
[illegible]

[illegible]

Na

[illegible]

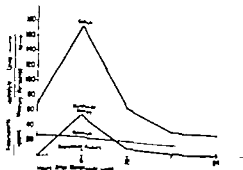
K^+



CLINICAL IMPLICATIONS OF MERALLURIDE MERCURY EXCRETION

COMPARISON OF
MERALLURIDE MERCURY EXCRETION
WITH SODIUM AND POTASSIUM EXCRETION
IN NORMAL SUBJECTS

[illegible]
[illegible]





COMPARISON OF
MERALLURIDE MERCURY EXCRETION
IN UNRESPONSIVE PATIENT
WITH A RESPONSIVE ONE

[illegible]
[illegible]
[illegible]
[illegible]

Diuresis is uniformly accompanied by excretion of the intact meralluride molecule. In the occasional nonresponsive patient, as would be expected 24 hour recovery of meralluride molecule is lower Also the percentage of degradation products found in the urine rises This tends to confirm the conclusion that diuresis is a response to the whole organomercurial molecule, and that degradation products or ionization are not a factor in clinical diuresis

MERALLURIDE MERCURY EXCRETION
IN NORMAL SUBJECTS

Percent of Hg Given (78 Mg)

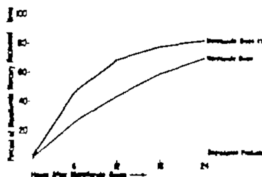
(Average Values)



MERALLURIDE MERCURY EXCRETION
IN ALL PATIENTS WITH HEART FAILURE

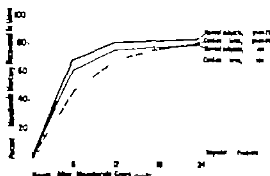
Percent of Hg Given (78 Mg)

(Average Values)



COMPARISON OF MERALLURIDE MERCURY EXCRETION
GIVEN I V AND I M
NORMAL SUBJECTS AND PATIENTS WITH HEART FAILURE

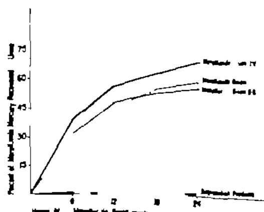
(Average Values)



MERALLURIDE MERCURY EXCRETION
IN CARDIAC PATIENTS RESPONSIVE TO THERAPY

Percent of Hg Given (78 Mg)

(Average Values)



[illegible] of the [illegible] University of [illegible]

[illegible]

[illegible] Studies [illegible] and [illegible]

[illegible] and Tufts University [illegible] Medical School, Boston

[illegible] ACTH, [illegible] and inhibitor[illegible]) are [illegible]

[illegible]

Use of Rabbit Aortic Strip in Diagnosis of Pheochromocytoma

Oscar M. Helmer and R. L. Martz, Lilly Laboratory for Clinical Research, General Hospital, Indianapolis.

With the aid of [illegible] smooth muscle bath, employing [illegible] spirally cut strip of rabbit aorta, [illegible] method for assay of human urine for detection of [illegible] amounts of epinephrine and nor-epinephrine is demonstrated. Only small amounts (0.0–0.10 ml.) of unfractionated urine are necessary for the test, since urine contains factors that enhance the contraction of the strip induced by epinephrine or nor-epinephrine. The response produced by urine from patients [illegible]ith essential hypertension is compared with samples from persons [illegible]ith pheochromocytoma. The results of preoperative tests in six patients with pheochromocytoma are exhibited. The simplicity of this test makes it [illegible] procedure that might be used in [illegible] hospital laboratory.

The F[illegible]aluation of Bronchodilator Drugs in the Treatment of Asthma.

G. L. Snider, D. B. Radner, and M. M. Mosko, Michael Reese Hospital, Chicago.

Asthma is [illegible] bronchoconstriction resulting in the development of acute obstructive emphysema. The mechanism of bronchoconstriction varies greatly from patient to patient and in the same patient at different times. Because of this great variability objective methods are necessary for precise evaluation of drugs in this condition. Controlled clinical studies, while useful, are time-consuming and not ideal for screening new drugs. Serially repeated tests of ventilatory function in acute asthmatics, done before and after the administration of the test drug and then after [illegible] known bronchodilator substance, have provided accurate information regarding the efficacy of new bronchodilator agents. They have also given useful information regarding the variable pathogenesis of bronchoconstriction in [illegible]sthma.

The Factors Influencing the Coronary Circulation.

Eliot Corday, Herbert Gold, and Lauro B. de Vera, Institute for Medical Research, Cedars of Lebanon Hospital, and University of California at Los Angeles School of Medicine, Los Angeles.

The antegrade (normal) and retrograde (collateral) coronary flows were measured in the experimental animal and were found to vary [illegible]ctly to the mean systemic blood pressure. Therefore, the [coron]ary circulation could be improved considerably by increasing the [illegible] pressure. The deleterious effects of premature auricular and [ventri]cular systoles and other arrhythmias on the coronary circulation [illegible] be demonstrated.

Chlorpheniramine Maleate in the Prophylaxis of Nonhemolytic Transfusion Reactions.

Frederick M. Offenkrantz and George Babcock Jr., Rahway General Hospital, Rahway, N. J.

This exhibit consists of (a) [illegible] survey of the recent literature on the normal incidence of transfusion reaction, (b) [illegible] report of compatibility of CT[illegible] with blood, (c) data on 5,912 transfusions over [illegible] three-year period, and (d) [illegible] survey of literature on antihistaminic effect on the incidence of reaction. Chlorpheniramine [w]as added to 2,586 transfusions, and 3,346 served as controls. A total of 164 reactions (5.1%) was observed in the control group (109 pyrogenic, 47 allergic and 2[illegible] combined [all]ergic and pyrogenic). In the treated group 15 reactions (0.6%), consisting of pyrogenic 1[illegible], allergic 2, and combined allergic-pyrogenic [illegible] were observed. The antihistaminic afforded maximum protection against [illegible] reaction (fifteen-fold reduction) and considerably reduced the incidence of pyrogenic reaction (fivefold reduction).

Effects of Massive Prednisolone Therapy in Leukemia.

Joseph M. Hill, G. J. Marshall, and D. J. Falco, Dallas.

Data from approximately 30 [ca]ses of acute leukemia and 6 cases of chronic leukemia are presented in condensed form. Special studies of cytological changes due to therapy are illustrated [w]ith phase interference, color photomicrographs, electron microscopy, and color photomicrographs. Coagulation and metabolic studies are also reported.

Phenoxymethyl Penicillin: Pharmacological and Therapeutic Studies; Massive Doses and Treatment of Serious Infections.

Edward L. Quinn, Frank Cox Jr., James M. Colville, and Joseph Truant, Henry Ford Hospital, Detroit.

The exhibit shows first, [illegible] graphic and tabular presentation of the chemical and physical properties of phenoxymethyl penicillin and certain comparisons between phenoxymethyl penicillin and penicillin G. The second aspect of the exhibit presents data comparing blood levels of phenoxymethyl penicillin and penicillin G after the oral administration of [a] single 2 million-unit dose to each of the same 10 normal subjects. The effect of [a] renal blocking agent (probenecid) on blood levels of phenoxymethyl penicillin is also presented. Phenoxymethyl penicillin may be expected to produce greater and more prolonged blood levels than penicillin G when given by the oral route. In doses of 12 million units per 24 hours it results in significant penicillinemia. The third phase demonstrates the use of massive doses of penicillin V in the treatment of serious infections.

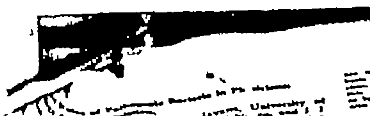
Echographic Cancer Detection and Diagnosis.

J. J. Wild and John M. Reid, St. Barnabas Hospital, Minneapolis.

The operation of the basic electronic apparatus is demonstrated with the aid of [a] mechanical model. The echo responses of tissues, presented graphic[ally] [illegible] are shown, and the interpretation of these graphs, which led to development of direct visualization of lesions, is explained. Instruments for diagnosis of lesions of the breast and other sites such as the [illegible] stomach, are demonstrated, together with an instrument for possible [illegible] searching of the breasts (detector). Instrumentation for searching the lower gastrointestinal tract and the [illegible] organs such as the prostate and the cervix uteri are also demonstrated, including some of the first echograms taken within the body.

Novobiocin: A New Antibiotic.

Augustus Gibson, Charles F. Light, Elmer Alpert and



[illegible] Bacteria in [illegible]

[illegible] University of [illegible] and [illegible] School of Medicine, [illegible]

[illegible] work will be done at the exhibit, thus demonstrating isolation, identification, and antibiotic-sensitivity testing of bacteria.

[illegible] can be employed.

A New Oral Diuretic with Minimal Side-Effects.

C. G. Van Arman, H. R. Dittlbach, and J. P. Hogan, G. D. Searle & Co., Chicago.

Description of laboratory work on an orally active [illegible] diuretic of [illegible] structure is presented, with comparison of potency with standard diuretics, including toxicity, lack of [illegible] effect, and renal hemodynamics.

Sulfamethoxypyridazine: A New Antibacterial Sulfonamide.

S. M. Hardy, B. W. Carey, J. F. Monroe, and C. H. Demos, Lederle Laboratories, Pearl River, N. Y.

The exhibit presents information concerning a new sulfonamide that by pharmacological study in animals has high solubility in urine, good absorption from the intestinal tract, slow urinary excretion, low conjugated drug in the blood, and good penetration through the blood-brain barrier. The results of acute and chronic toxicity studies are shown. A study of its antibacterial spectrum in animals indicates that it is equal in activity to sulfadiazine. The results of clinical trials in humans are shown. Blood level studies in humans indicate prolonged therapeutic levels after single doses. Single or twice a day dosage appears to maintain therapeutic blood levels.

Lysine Needs in Nutritional Stress of the Aged.

Anthony A. Albanese, Reginald A. Higgons, and Louise A. Orto, St. Luke's Convalescent Hospital, Greenwich, Conn.

Findings of extended studies indicate that the healthy aged are able to sustain themselves in good nutritional status on daily minimum intakes of approximately 54 gm. of protein in a self-selected diet of about 1,500 calories. However, under conditions of nutritional stress from any cause, this intake of proteins (or even greater amounts) has been found to be insufficient for the rapid repletion of essential tissues. Our presentation attempts to demonstrate that supplementing the diets of aged convalescents with lysine, because it corrects amino acid imbalances and thereby increases protein utilization, offers a practical and promising means of treating protein deficiencies and accelerating tissue reconstruction.

Hypertension: P[illegible] [illegible] of Therapy

John H. Moyer, Ralph V. Ford, Edward W. Dennis, Robert McConn, and Coleman Caplovitz, Baylor University College of Medicine, Houston, Texas.

This exhibit centers around the pharmacodynamics of various drugs that are used for the treatment of hypertension. An attempt will be made to (1) show how drug responses of hypertensive patients gives information relative to etiological factors in the origin of hypertension, (2) demonstrate renal responses to blood pressure reduction with various antihypertensive agents, especially pentolinium, (3) present an animated illustration of the origin of hypertension and the sites of drug action when treating this disease, and (4) present the clinical application of these principles for the practicing physician.

Headache.

Bernard Judovich, Golda R. Nobel, Pedro Polakoff and William Sachs, Philadelphia.

The exhibit shows headaches associated with lumbar puncture, pneumoencephalogram, ventriculogram, myelogram, postconcussion state, herniated cervical disk, and tension. A significant number of patients obtained prompt relief of headache with the use of a vasodilating agent. All patients had been treated by placebos and analgesics without satisfactory relief. Placebo reactors were eliminated from the series. In headache that followed neurosurgical investigative procedures, a group that had comparatively few placebo-reactors, rapid and satisfactory relief was obtained by a definite proportion of patients, suggesting that vasoconstriction may be one of the factors associated with this type of headache. Clinical observations regarding muscle spasm of the cervical spine and the results of experimental superimposed muscle spasm during the painful state cast doubt upon the concept that muscle spasm in itself will produce headache.

Prednisone and Prednisolone in Experimental Bacterial Infections and Toxemia.

H. Seneca, O. Kupfer, and A. Kozak, College of Physicians and Surgeons, Columbia University and Presbyterian Hospital, New York.

The exhibit shows (1) in vitro effect of prednisone and prednisolone on bacterial cultures, (2) in vitro effect of prednisone or prednisolone plus an antibacterial or antibiotic on bacterial cultures, (3) in vivo effect of prednisone or prednisolone plus tetracycline in bacterial infections in mice, and (4) in vitro and in vivo effect of prednisolone on diphtheria toxin.

A New Organic Fibro-Cellulose Powder for Exudative Diseases of the Skin: Results in 323 Cases.

Cleveland J. White, Stritch School of Medicine of Loyola University and Mercy West Suburban, and Norwegian-American hospitals, Chicago.

A new organic fibrocellulose powder, especially processed from maize, has been found to have exceptional absorptive powers for inflammatory and exudative superficial diseases of the skin. It does not cake and has the ability to absorb almost five times its own weight in fluids. The pH is 4.3, which fits into the normal acid reaction of the skin. It has been extremely efficacious in exudative and hyperhidrotic lesions such as ringworm, especially in the intertriginous and plantar surfaces. Because it is of cellulose composition, it has never been known to be invaded by any known pathogenic fungus or bacteria. The powder has also been found very useful in widespread skin diseases such as pemphigus to absorb the moisture and prevent growth of other bacteria.

Blood Dialyzers, Blood Oxygenators, and Blood Pumps.

Arthur E. MacNeill and John E. Doyle, Buffalo.

Clinical and experimental blood dialyzers, blood oxygenators, and blood pumps developed in the Synthetic Organ Mechanism program

Value of Proper Dosage of Anticholinergic Drugs in Treatment of Peptic Ulcer: Optimal Effective Dose.

DAVID C. H. SUN and HARRY SHAY, Temple University School of Medicine, Philadelphia.

The exhibit shows the effect of anticholinergic drugs on gastric secretion. Results indicate that, in order to administer an effective dose of an anticholinergic drug, one needs to determine the dose of the drug for each patient and not according to body weight or a uniform dose recommended by the pharmaceutical company. This proper dose is termed the optimal effective dose. Comparative studies were done with the recommended dose and the optimal effective dose on basal gastric secretion, digestive secretion, secretion induced by emotional stress and by insulin hypoglycemia, and on gastric emptying. Clinical response with the use of the optimal effective dose of the drug in patients with duodenal ulcer is shown.

INTRODUCTION

Acid-pepsin is Sine Qua Non for the development of peptic ulcer. To achieve optimum conditions for healing of an ulcer peptic activity should be inhibited by maintaining gastric contents at pH>4.5. At pH>4.5, peptic activity is reduced almost to zero.
The internist tries to accomplish this result through gastric physiologic rest, diet and drugs that either neutralize acid or inhibit gastric secretion. The surgeon by vagotomy and or subtotal gastrectomy attempts to reduce the output of acid and pepsin.

The contribution by the Ideal Anticholinergic Drug should:

1. Consistently inactivate pepsin by inhibiting acid secretion to pH>4.5 for long periods after oral ingestion
2. Produce no or minimal side effects
3. Induce no tolerance
4. Be inexpensive

We would emphasize that the use of Anticholinergic Drugs should only be considered part of the overall management of ulcer patients.

The following data indicate objectively that the effectiveness of an Anticholinergic Drug depends upon PROPER DOSAGE — dosage tailored for each patient

DRUGS USED IN THIS STUDY

GENERIC NAME	PROPRIETARY NAME
Mepiperphenidol bromide	Darstine
Tricyclamol methylsulfate	Elorine
Methscopolamine bromide	Pamine
Propantheline bromide	Probanthine
Aluminum Hydroxide and Magnesium Trisilicate	A.M.T.
Atropine	Atropine
T. Belladonna	Tr. Belladonna

DRUG EFFECT ON BASAL GASTRIC SECRETION

A. Various doses of same drug — same patient — correlation between dose, antisecretory potency and side effects

[illegible]

CONCLUSION

Suppression of gastric acidity to pH>4.5

1. Did not occur at any dose without accompanying dryness of mouth, but dose producing dryness did not necessarily produce such pH values.
2. Did occur with effective drugs if dose was increased to any increment below that which produced uncomfortable symptoms of parasympathetic inhibition (blurring of vision, palpitation, dizziness, headache, weakness, flushing of face and/or excessive dryness of mouth and throat) —

THIS DOSE, WE TERMED, OPTIMAL EFFECTIVE DOSE ("O.E.D.")

B. Optimal effective dose of different drugs — same patient

[illegible]

CONCLUSION

1.

DRUG	NUMBER PATIENTS TESTED	EFFECTIVE
Tricyclamol methylsulfate	19	19
Mepenzolate bromide	13	13
Propantheline bromide	12	11
Tr. Belladonna	5	2
Atropine	4	2

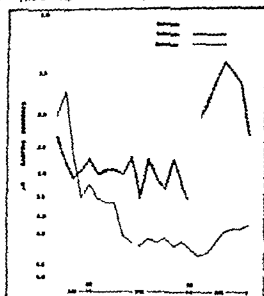
2. The "O.E.D." and dose calculated in mg./kg. body weight for Tricyclamol methylsulfate, Mepenzolate bromide and Propantheline bromide varied considerably and independently from patient to patient. Therefore, to administer an effective dose, dose of the drug must be tailored to each patient, and not according to body weight or recommended uniform dose.

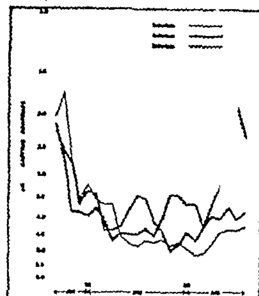
DRUG EFFECT ON DIGESTIVE SECRETION

Comparative effects of following schedules on pH of gastric contents, hourly throughout day and night

Schedule A Milk 7 ozs., cream 1 oz., skim milk powder 1 tbsp., q. h. from 8:00 m. to 11:00 p. m.
Schedule B Schedule A recommended dose (50 mg.) Tricyclamol methylsulfate q. i. d. and at 3:30 a. m.
Schedule C Schedule A Optimal Effective Dose, Tricyclamol methylsulfate, q. i. d. and at 3:30 m.
Schedule D Schedule A A. M. T. 15 ml., q. 2 h., from 8:00 m. to midnight
Schedule E Schedule A Optimal Effective Dose, Tricyclamol methylsulfate A. M. T.

A. Type of response in 4 of 8 patients tested (Responsive to Anticholinergic Drug)

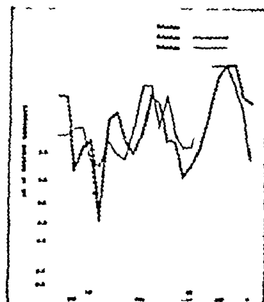


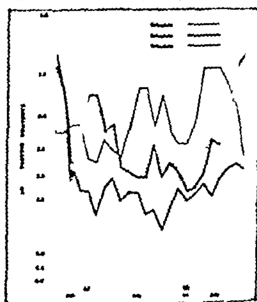


CONCLUSION

1. Milk mixture (Schedule A) ineffective
2. Recommended dose, 50 mg. of Tricyclamol methylsulfate and milk mixture (Schedule B) ineffective
3. "O. E. D." of Tricyclamol methylsulfate and milk mixture (Schedule C) Effective in maintaining pH 4.5 for long period, especially during the night
4. "O. E. D." of Tricyclamol methylsulfate A. M. and milk mixture (Schedule E) equa effective
5. A. M. T. and milk mixture (Schedule D) partially effective

B. Type of response in other 4 patients (Nonresponsive to Anticholinergic Drug)— "O. E. D." Tricyclamol methylsulfate was ineffective in suppressing digestive secretion. Addition of antacid to "O. E. D." was reasonably effective. However combined effect of antacid plus "O. E. D." in nonresponsive patient was not as good as result of "O. E. D." alone in responsive patient.





DRUG EFFECT ON GASTRIC SECRETION INDUCED BY EMOTIONAL STRESS

Gastric secretion induced by emotional stress —

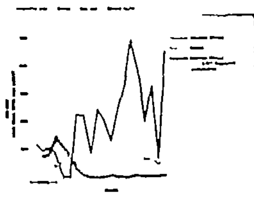
Subject [illegible] year old, white man, with Duodenal Ulcer

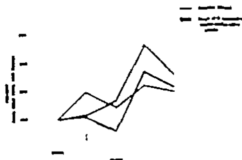
[illegible] gastric secretory experiments done within [illegible] months.

Control gastric secretory studies done on basal secretion for [illegible] hours.

On day of experiment with psychological interview one hour basal secretion was collected, then psychological interview by psychiatrist, followed by [illegible], lasted 30 minutes.

Gastric secretion collected for total of [illegible] hours.





CONCLUSION [illegible] stress produced early and late phases of gastric secretion, similar to those produced by insulin hypoglycemia stress [illegible] and by hypothalamic stimulation [illegible] monkey (see next chart)

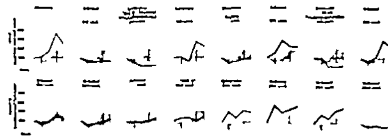
Development of conditioned response of gastric secretion [illegible] emotional stress.

Following graphs show sequence of events.

Shaded areas represent range of gastric secretion [illegible] consecutive control studies done within [illegible] months.

After [illegible] psychological interviews (Studies 1, 3, [illegible] and 5) [illegible] control study (4) done two weeks later revealed significant [illegible] gastric secretion, early and late phases. These, we believe, represent conditioned response. Such conditioned response was again demonstrated (8) after another psychological interview (7) and then returned [illegible] basal level (9) where [illegible] remained for [illegible] weeks (10 and [illegible])

Reappearance of psychiatrist with no verbal communication (12) produced an early phase of gastric secretion and [illegible] psychological interview (13) one week later induced both phases of secretion. Conditioned response again reappeared (14 and 15) and endured [illegible] approximately two months (16)



CONCLUSION Conditioned response of gastric secretion [illegible] emotional stress was demonstrated and emphasizes possibly significant [illegible] in peptic ulcer problem.

C. Comparative effect of recommended dose and [illegible] of Tricyclamol methylsulfate on gastric secretion induced by emotional stress.

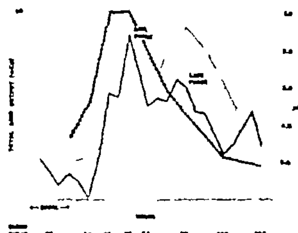


CONCLUSION [illegible] of Tricyclamol methylsulfate produced pronounced inhibition of [illegible] gastric secretion both pH and [illegible] over 4.5 hr [illegible] hours while the recommended dose produced similar depression for 1 hour.

DRUG EFFECT ON GASTRIC SECRETION INDUCED BY INSULIN HYPOGLYCEMIA

Two phases of increased gastric secretion were observed after insulin hypoglycemia "Early phase" dependent upon intact vagus and "late phase" dependent upon intact adrenal

A. Comparison of trend of gastric acid response to insulin hypoglycemia in man and to anterior and posterior hypothalamic stimulation in monkey



B. Effect of O E D Tricyclamol methylsulfate on gastric secretion induced by insulin hypoglycemia



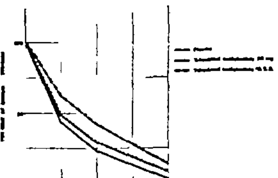
CONCLUSION

"O E D" of Tricyclamol methylsulfate produced partial inhibition of early phase (vagal) and pronounced inhibition of late phase (adrenal) of gastric secretion induced by insulin hypoglycemia

DRUG EFFECT ON GASTRIC EMPTYING AND INTESTINAL TRANSIT*

Comparative studies on the effect of
1. Ewald meal Placebo
2. Ewald meal Tricyclamol methylsulfate recommended dose 50 mg.
3. Ewald meal Tricyclamol methylsulfate *O.E.D.

Drug 8:30 A.M. ⬇	Ewald Meal Barium mixture 9:00 A.M. ⬇	10:00 A.M.	11:00 A.M.	1:00 P.M.
Placebo				
Tricyclamol methylsulfate 50 mg.				
Tricyclamol methylsulfate *O.E.D.				



Gastric emptying time (average of 9 subjects)

CONCLUSION

Significantly greater delay in gastric emptying at 1 and 2 hours follows *O.E.D. of Tricyclamol methylsulfate than after Placebo or Recommended dose of Tricyclamol methylsulfate, but no significant difference at 4 hours. Delay in intestinal transit time was noted after Tricyclamol methylsulfate.

CLINICAL RESULTS WITH PROLONGED USE OF 'O.E.D.' OF TRICYCLAMOL METHYLSULFATE IN DUODENAL ULCER

Only those patients continued on the drug for long periods are included. Patients who responded during active phase but did not continue on drug are not included.

[illegible]

CONCLUSION

13 of these 14 patients responded to 'O.E.D.' of Tricyclamol methylsulfate during active ulcer phase. The 14th patient had hemorrhage and pyloric obstruction when first seen. Anticholinergic drug [illegible] symptoms of obstruction, supporting the opinion that these drugs be avoided [illegible] patients with obstructive symptoms.

Two patients doing well while on 'O.E.D.' developed recurrence 2 and 4 months respectively after drug was discontinued. Thus, we decided to continue 'O.E.D.' for two years to observe incidence of recurrence.

Of the 13 patients who are continuing on 'O.E.D.' one developed pyloric obstruction after healing. The other 12 patients have remained symptom free while taking drug. Six of them have had repeated G. I. series [illegible] year after starting on the drug and no ulcer crater was found.

Lab. studies including CBC, urinalysis, PSP, [illegible] liver function profiles and ocular pressure studies remained within normal range.

SUMMARY AND CONCLUSION

The uniformity of our results showing an inhibition of Basal Gastric Secretion to pH 4.5 or higher by a single Optimal Effective Dose ('O.E.D.') of an effective Anticholinergic Drug and its superiority to a single Recommended dose in inhibiting 'Digestive Secretion' Secretion induced by Stress effect of Insulin Hypoglycemia and by Emotional Stress present [illegible] for the use of 'O.E.D.' of these drugs in the Clinical management of peptic ulcer disease. The absence of any untoward side effects following prolonged administration of 'O.E.D.' of these drugs makes it practical for clinical use. We would emphasize that Anticholinergic drugs comprise only a part of the overall management of peptic ulcer disease.

Chronic Ulcerative Colitis: Diagnostic and Therapeutic Considerations.

N. C. Hightower, A. C. Broders Jr., R. D. Haines, A. W. Sommer, and J. F. McKinney Scott and White Clinic, Temple, Texas.

The exhibit stresses the important diagnostic features of chronic ulcerative colitis, including data obtained from the history, physical examination, and laboratory findings of approximately 200 cases observed during a 15-year period at the Scott and White Clinic. Diagrams, tables, montages, and roentgenograms show the principal symptoms, important laboratory data and roentgenographic and proctoscopic findings. The exhibit also depicts the modern management of chronic ulcerative colitis, stressing the importance of diet, bacteriostatic and antibiotic agents, hormones, vitamins, antispasmodics, and fluid and electrolyte replacement.



Chronic ulcerative colitis is a disease process usually confined to the lower gastrointestinal tract but there may be involvement of other organ systems structures, and tissues The etiology is unknown, prevention appears impossible, and no specific cure has been devised. Although the patient afflicted with this condition presents many difficult and challenging problems to the physician, satisfactory management can be attained

The exhibit includes (1) an analysis of data summarizing our experience with 220 cases of chronic ulcerative colitis, (2) a detailed resume of diagnostic criteria (clinical, laboratory, roentgenographic, and proctoscopic) by which the clinical types of ulcerative colitis are recognized (3) a classification of the complications into entities responding to medical or surgical management, and (4) a treatment program outlining definitive therapy for uncomplicated and complicated disease

ANALYSIS OF DATA

CHRONIC ULCERATIVE COLITIS

220 Cases

SEX

Males	106
Females	114

AVERAGE AGE

	Years
Males	33.3
Females	34.8

DURATION OF DISEASE

	Years
Males	4.1
Females	5.4

AGE OF ONSET BY DECADES

MALES

Decade	Number of Patients
0- 9	6
10-19	17
20-29	27
30-39	26
40-49	26
50-59	8
60-69	1
Total	106

FEMALES

Decade	Number of Patients
0- 9	[illegible]
10-19	24
20-29	25
30-39	34
40-49	16
50-59	8
60-69	[illegible]
Total	114

HEMATOLOGICAL DATA

HEMOGLOBIN

Average value	11.1 Gm./100 cc.
Anemia	
Moderate (10-12 Gm.)	39%
Marked (below 10 Gm.)	12%

LEUCOCYTES

Average value	10,0[illegible]/cu. mm.
Leucocytosis	
Moderate (12-20,000)	33%
Marked (over 20,000)	3%

SEDIMENTATION RATE

Average value	43 mm./hr
Increased	
Moderate (40-80)	29%
Marked (over 80)	39%

EXTENT OF DISEASE

		Number of Patients
RECTUM ONLY		41
RECTUM TO AND INCLUDING		
Sigmoid	34	
Splenic Flexure	23	
Hepatic Flexure	16	
Cecum	65	
Terminal Ileum	23	
		163
SEGMENTAL TYPES		8
RADIOGRAPHY UNSATISFACTORY		8
TOTAL		220

ANALYSIS OF DATA

COMPLICATIONS TREATED MEDICALLY

SKIN LESIONS	13
ARTHRITIS	13
HEMORRHOIDS	9
HEPATIC INSUFFICIENCY	6
MENSTRUAL IRREGULARITIES	5
ELECTROLYTE IMBALANCE	3
DRUG DERMATITIS	3
PERIPHERAL NEURITIS	2
EPISCLERITIS	2
RENAL INSUFFICIENCY	1
TOTAL	61

COMPLICATIONS TREATED SURGICALLY

INTRACTABLE DISEASE		13
FISTULAE		
In Ano	7	
Rectovaginal	2	
Vesicocolic	2	
Internal	1	
		12
PERIANAL ABSCESS		4
POLYPS		3
PERFORATIONS		3
CARCINOMA		2
INTESTINAL OBSTRUCTION		2
HEMORRHOIDS		2
MASSIVE HEMORRHAGE		1
ANAL FISSURE		1
TOTAL		43

ASSOCIATED DISEASES

DUODENAL ULCER	5
HYPERTENSION	3
RHEUMATOID SPONDYLITIS	3
PSYCHOSIS	2
LOW MENTALITY	3
PSORIASIS	2
DIABETES MELLITUS	1
PERNICIOUS ANEMIA	1
SYPHILIS	1
MISCELLANEOUS	6
TOTAL	33

CAUSES OF DEATH

CARCINOMA	3
FULMINATING COLITIS	2
PERITONITIS	2
INTESTINAL OBSTRUCTION	1
MESENTERIC THROMBOSIS	1
VOLVULUS	1
HEPATIC INSUFFICIENCY	1
PULMONARY EMBOLUS	1
LYMPHOSARCOMA	1
TOTAL	13

DIAGNOSIS

PROCTOSCOPIC



Fig. 1. Normal rectal mucosa.



Fig. 2. Marked mucosal edema with minimal ulceration. Ulcerative Colitis for two years.



Fig. 3. Moderate ulceration. Colitis for seven years. Four to six bloody stools per day.



Fig. 4. Marked mucosal ulceration. Periodic diarrhea for six years with eight to ten bloody stools per day.

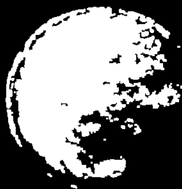


Fig. 5. Same as Fig. 4 after ten days of rest, diet, and Azulfidine. Two or three non-bloody stools per day.



Fig. 6. Submucosal scarring. Colitis inactive after three months of continuous therapy with Azulfidine.

COMPLICATIONS



[illegible]



[illegible]



[illegible]



[illegible]

COMPLICATIONS



ARTHRITIS

Arthritis wrist and proximal interphalangeal joints. Subsided in four days with ACTH.



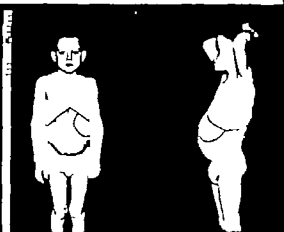
SKIN LESIONS

Symmetrical erythematous and purpuric lesions. Disappeared after ix days of ACTH.



PERIANAL FISTULAE

Multiple perianal fistulae. Complet healing after total colectomy and ileostomy



SPLENOMEGALY

Hepatic insufficiency and splenomegaly ith ulcerative colitis of two years' duration.



EPISCLERITIS

Unilateral episcle itis ith active colitis. Subsided in three days with ACTH therapy



STOMATITIS

Candida albicans stomatitis. Cleared spontaneously ith med al treatment of olitis.

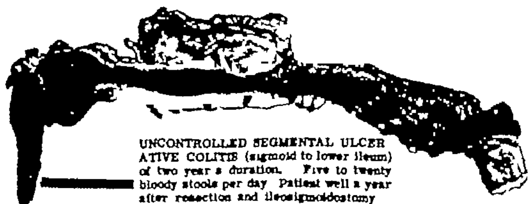
COMPLICATIONS



ACUTE FULMINATING ULCERATIVE COLITIS of one month s duration. Patient expired after perforation and peritonitis. Necropsy specimen.



MARKED NARROWING AND SHORTENING OF COLON Uncontrolled ulcerative colitis for four years. Patient expired fifteen years after colectomy from volvulus of small bowel.



UNCONTROLLED SEGMENTAL ULCERATIVE COLITIS (sigmoid to lower ileum) of two year s duration. Five to twenty bloody stools per day Patient well a year after resection and ileosigmoidostomy



EXTENSIVE POLYPOSIS OF COLON Recurrent polyp formation in rectum and in sigmoid. Ulcerative colitis for five years. Patient well one year after colectomy



ACUTE FULMINATING ULCERATIVE COLITIS of six week s duration. Massive hemorrhages and perforation. Patient well two years after total colectomy and ileostomy

TREATMENT

UNCOMPLICATED DISEASE

REST

PHYSICAL

Active Disease Hospital

Inactive Disease Home

GASTROINTESTINAL

Anticholinergics

Low Residue Diet

EMOTIONAL

Sedatives

Tranquilizers

Psychotherapy

DIET

LOW RESIDUE

High protein

Appetizing with variety

ADEQUATE CALORIES

2,000 to 3,000 per day

SUPPLEMENTAL VITAMINS

Thiamin Chloride

Ascorbic Acid

Vitamins A and B

SULFONAMIDE THERAPY

SALICYLAZOSULFAPYRIDINE (Azulfidine)

Adequate Dosage

Long Term Therapy

INITIAL DOSAGE

1-2 Gm. four times daily
until disease quiescent

MAINTENANCE DOSAGE

1-2 Gm. four times daily
given intermittently one to
two years

SUPPORTIVE MEASURES

ANTICHOLINERGICS

Quaternary Amines

ANTIBIOTICS

Penicillin
Streptomycin
Broad Spectrum

BLOOD AND ELECTROLYTES

Transfusions
Potassium, Sodium, Calcium
Chloride Bicarbonate

SEDATIVES AND NARCOTICS

Barbiturates
Tincture Opium

HORMONES

Cortisone
ACTH
Testosterone

TREATMENT

COMPLICATED DISEASE

COMPLICATION	TYPE OF THERAPY
ANEMIA	Whole Blood Transfusions
DERMATOSES	
Pyoderma	Antibiotics
Cellulitis	Antibiotics
Erythema Nodosum	Steroids
Erythema Multiforme	Steroids
ARTHRITIS	Physiotherapy Salicylates Steroids
HEPATIC INSUFFICIENCY	High Carbohydrate Diet Vitamin B_{12} Lipotropic Agents
RENAL INSUFFICIENCY	Low Protein Diet
GONADAL INSUFFICIENCY	Estrogens Androgens

COMPLICATION	TYPE OF THERAPY
HEMORRHOIDS	
Acute	Analgesics Antibiotics [illegible]
Thrombotic Acute	Excision
Severe	Hemorrhoidectomy Inactive disease or rectum uninvolved
FISSURE	Analgesics Excision Inactive disease rectum uninvolved
FISTULAE	
In Ano	Antibiotics Excision Inactive disease rectum uninvolved
Internal	[illegible] [illegible]
PERIANAL ABSCESS	Antibiotics Incision and Drainage

COMPLICATION	TYPE OF THERAPY
PERIPHERAL NEURITIS	Vitamin B_{12}
NUTRITIONAL EDEMA	Whole Blood Transfusions Protein Supplements
EPISCLERITIS	Steroids
ELECTROLYTE IMBALANCE	Electrolytes
ENDOCARDITIS	Antibiotics Steroids
THROMBOPHLEBITIS	Elevation Heat Locally Antibiotics Sympathetic Block Anticoagulants
FULMINATING COLITIS	Whole Blood Transfusions Antibiotics Steroids Electrolytes Ileostomy and Colectomy

COMPLICATION	TYPE OF THERAPY
HEMORRHAGE	[illegible] [illegible]
PERFORATION	Antibiotics [illegible] [illegible] [illegible]
STRICTURE	
Anal	[illegible]
Colon	
Segmental disease	[illegible]
Generalized disease	[illegible]
POLYPS	
Rectum	[illegible]
Colon	[illegible]
CARCINOMA	[illegible]
INTRACTABLE [illegible]	[illegible] and Colectomy

The Use of Reserpine in Gastroenterology: Its Effect upon Gastric Secretion.

J Alfred Rider, John O Gibbs, Joyce Swader, Lourdes F Aggaoili Maureen Merkle, Dean W Frazier, Edward H. Abrams, and Jerr Deroin, University of California Medical Center San Francisco.

Parenterally given reserpine in doses of 0.50 to 2.5 mg. usually but not always, produced marked increase in free acidity and volume of human gastric juice. This effect was not blocked by an effective anticholinergic agent methscopolamine. But when 0.25 mg. of reserpine was given, or in those cases in which the rise in gastric acidity was not striking, definite blocking effect from methscopolamine could be observed. One milligram of reserpine was given orally daily to 20 patients for periods of 7 to 200 days without any consistent effect being produced on the basal gastric secretions. Clinically approximately 70% of a large group of patients with different chronic gastrointestinal diseases benefited from orally given reserpine therapy. In some cases it was the only treatment used, in others, reserpine was added when other methods of therapy were only partly successful. Approximately 10% of the patients so treated experienced the usual side-effects, which were rarely of sufficient severity to warrant discontinuing use of the drug.

Polyps of the Large Intestine: Pathology and Histogenesis.

Antonio Valdes-Dapena and William J Beckfield, Graduate Hospital, University of Pennsylvania School of Medicine, and Marie A. Valdes-Dapena, Woman's Medical College, Philadelphia.

Color transparencies, gross and microscopic, show the development of adenomatous polyps and villous papillomas and the transition to carcinoma. Diagrams, based on camera lucida drawings, illustrate early stages of polyps.

Erosive Esophagitis.

Gordon McHardy Robert McHardy Claude Craighead, and Irby J Hurst Brown-McHardy Clinic, Louisiana State University School of Medicine, New Orleans.

The exhibit shows an incidence study based on the change since esophagoscopy has been a routine diagnostic adjunct. It includes etiological consideration with depiction of newer concept diagnostic features, showing an endoscopy study with drawings of color changes and specific mucosal features together with medical and surgical therapy and depictions of the limitations of each.

Intraluminal Pressures from Upper Gastrointestinal Tract: Measurement and Significance.

E. C. Texter Jr., H C. Moeller, H. W Smith, J H. Stickley and C. J Barborka, Northwestern University Medical School, Chicago.

The exhibit demonstrates (1) the technique used for measuring intraluminal pressures, (2) the normal and abnormal findings in the esophagus, (3) the normal and abnormal findings of the stomach and duodenum, and (4) a summary of the findings. The exhibit is based on approximately 110 pressure studies of normal subjects, and patients with cardiospasm, hiatus hernia, and gastric and duodenal ulcer.

Esophageal Motility: Dynamics of Deglutition in Health and Disease.

C. F Code, A. M Olsen, F E. Donoghue, H. A Andersen, B Creamer, F L. Fyke Jr., and A. H. Bulbulian, Mayo Clinic Rochester Minn.

A miniature electromagnetic transducer was placed within the lumen of the esophagus and also an open tip, water-filled tube system connected to a manometer. Permanent records were obtained by use of pressure recorders and a photokymograph. Fluctuations in intraesophageal pressure in various parts of the esophagus are recorded at rest and during deglutition in healthy persons and in patients with various esophageal disorders. Furthermore, by use of two or three such pressure-detecting devices in series at selected intervals within the esophagus, simultaneous records were obtained that *define the sequence of events during swallowing*. This exhibit presents (1) the method of recording esophageal motility, (2) recordings obtained from the healthy esophagus, (3) patterns found to be characteristic of cardiospasm, scleroderma, and diffuse spasm; (4) preliminary observations in other esophageal disorders; and (5) examples of the value of this technique in the diagnosis of esophageal disease.

Recent Experimental and Clinical Experiences with Antacid Therapy in Peptic Ulcer

Leonidas H Berry Jonas Adomavicius, Robert Schoop and Juanita Purnell, Chicago.

The exhibit shows clinical and laboratory experiences with dihydroxyaluminum-aminoacetate as an antacid. pH and free acid curves indicate the neutralizing value of the chemical in cases of gastric, duodenal, and gastrojejunal ulcer and hypertrophic gastritis, while curves of a control group show neutralization in patients without gastrointestinal disease. Acid-antacid relationships are shown in terms of values determined with an electric pH meter. Correlation of all data with age, sex, and other variables and clinical course of the disease includes data on recurrence over a period of two years. Further correlation studies were made by gastroscopic examinations and repeated follow-up by x-ray and gastroscopy to follow the course of healing, especially in gastric ulcer.

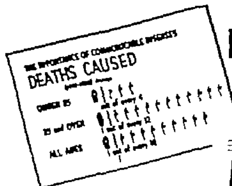
Laboratory Techniques in the Diagnosis of Communicable Diseases.

R. B HOGAN, M. M BROOKE, G. R. COOPER, D. S. MARTIN, and M SCHAEFFER, Communicable Disease Center Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Ga.

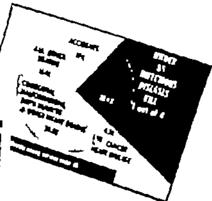
Newly developed diagnostic techniques, or current methods employed, are presented and evaluated for selected infectious diseases, including those in which abnormal immune responses are of particular clinical interest. Details of selected procedures and experiences in their diagnostic applications are presented for diphtheria, leptospirosis, E. coli infections, toxoplasmosis, trichinosis, mycotic infections, encephalitis, poliomyelitis, rabies, agammaglobulinemia and diseases with abnormal protein and cellular responses.

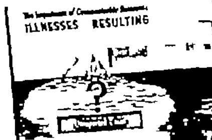
COMMUNICABLE DISEASES

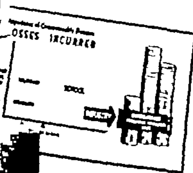
IMPORTANCE and PROBLEMS

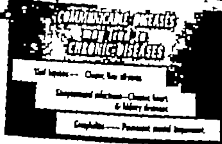








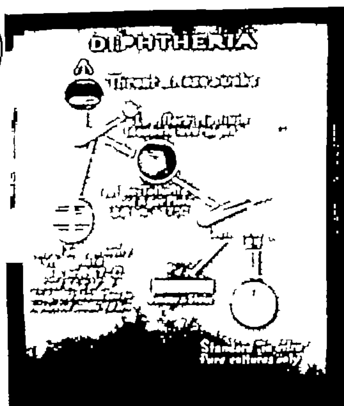




BACTERIA

Bacterial infections continue to be important in the practice of medicine. Antibiotic therapy has reduced the case fatality rates in most bacterial diseases but the number of infections caused by antibiotic resistant organisms is increasing. Bacteria, formerly considered unimportant are producing infections following antibiotic induced alterations of the normal bacterial flora. Bacterial infections may no longer present typical clinical pictures and the indiscriminate use of antibiotic therapy in early life may interfere with the development of natural immunity. Accurate identification of the particular bacterium causing an infection is essential to good clinical and epidemiologic practice.



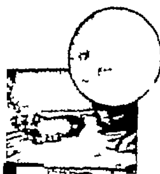


Diphtheria may be unsuspected clinically. Identification of virulent *C. diphtheriae* is essential for control

ESCHERICHIA COLI DIARRHEA

Stool specimen plated on

(Glucose, lactose, adonitol, inositol)



Certain *E. coli* serotypes produce epidemics of severe diarrhea in nurseries. Serotype determination is essential for control

LEPTOSPIROSIS

DIRECT CULTURE

SEROLOGIC TECHNICS

AGGLUTINATION

Paired specimens necessary to demonstrate rise or fall in titer.

Positive

Negative



Icterus is uncommon in *L. pomona* and *L. canicola* infections. Leptospirosis should be suspected in patients with fever or meningeal symptoms

PARASITES and FUNGI

Animal parasites and fungi are among the most common disease-producing agents of man. However unless clinical suspicion is high and competent laboratory work is obtained, they are frequently missed as the etiological agents of disease. Recent research has contributed significant laboratory aids to assist in the accurate diagnosis of parasitic and mycotic infections.



Laboratory confirmation is essential for a diagnosis of toxoplasmosis.









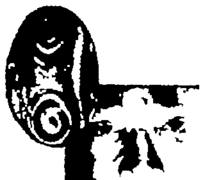






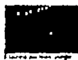






The bentonite flocculation test for trichinosis is accurate rapid and simple to perform.



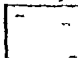



















Diagnosis of mycotic diseases depends upon correlating clinical findings with sound laboratory procedures.

VIRUSES and RICKETTSIAE

Current developments in laboratory procedures, especially in the improvement of tissue culture and serologic technics, provide more precise laboratory tests for use in the differential diagnosis of viral and rickettsial diseases. Many physicians are able to obtain certain services from local laboratories and specimens for tests that exceed local facilities may be referred to central laboratories for more elaborate study

Confirmation of the clinical diagnosis by laboratory methods is now possible for non-paralytic poliomyelitis aseptic meningitis (due to mumps, Coxsackie ECHO and lymphocytic choriomeningitis virus) the viral encephalitides, influenza acute respiratory disease (due to the adenovirus group) psittacosis, rickettsial diseases, and epidemic keratoconjunctivitis. Recent studies indicate that herpes zoster chickenpox, measles and other exanthema may be added to the list

There remains a group of diseases (including hepatitis and common cold) for which there are at present no specific laboratory tests.



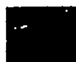
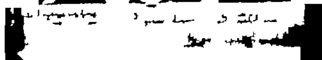
The laboratory diagnosis of viral and rickettsial diseases depends upon: (1) Good clinical and epidemiologic data (2) Selection of appropriate specimens for virus isolation and (3) Collection of acute and convalescent serum specimens for antibody assay

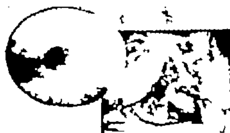






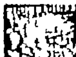











The differential diagnosis of infections of the CNS is based on clinical data, augmented by isolation of virus from feces and/or spinal fluid and the demonstration of a rise in specific antibody tite







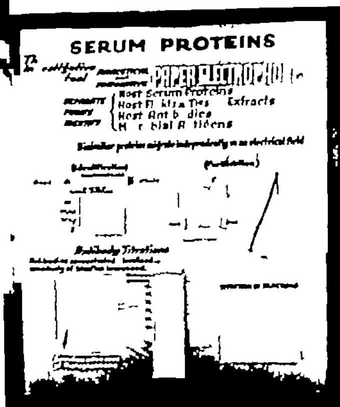



Throat washings or swabs for virus isolation and antibody studies on paired (acute and convalescent) specimens of serum are used in the diagnosis of influenza and other types of acute respiratory disease

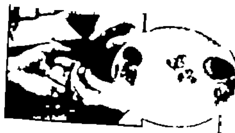
HOST REACTIONS

The clinical course and outcome of any infectious disease depends upon the reaction of the individual patient to each particular infectious agent. Host reactions are both specific (immunologic) and non-specific (metabolic). Host reactions are measurable and are most useful in the diagnosis, in the estimation of prognosis and in the management of a patient with an infectious disease. Detection of any alterations in proteins and other components of serum exudates and body fluids is important as is the observation of metabolic changes occurring within blood cells and within cells obtained from other tissues such as the lymph nodes.

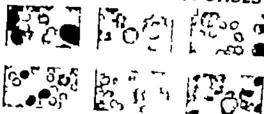




Changes in serum proteins occur in all infectious diseases. Such changes usually are non-specific especially if the blood is taken early in *the disease*



Metabolic reactions within blood cells are revealed by histochemical stains and frequently are of value in differential diagnosis



HISTOCHEMICAL STAINS AID IN DIAGNOSIS



Alkaline Phosphatase Activity in Cytoplasm of Mature Granulocytes





CONGENITAL

Normal Serum

ACQUIRED

Hypogammaglobulinemia

Repeated Infections

Bronchiectasis

Lymphocytic Leukemia

Multiple Myeloma



Determination of the types of gamma globulin is just s important in evaluating host re Istance as is the measurement f their quantiti s

DEPENDABLE LABORATORY TECHNICS

in

COMMUNICABLE DISEASES

are needed not only in

DIAGNOSIS

of common and rare infections but also for





RAPID IDENTIFICATION

in

BIOLOGICAL WARFARE DEFENSE





and

CATASTROPHES

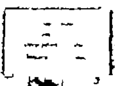




Exhibit from

U.S. DEPARTMENT of
HEALTH, EDUCATION and WELFARE
Public Health Service
Communicable Disease Center





Early Detection of Glaucoma.

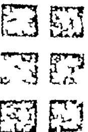
Franklin M. Foote, Willis S. Knighton and Virginia Smith Boyce, National Society for the Prevention of Blindness, New York.

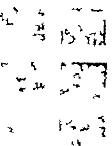
The exhibit presents description of various tests and signs that will help the family doctor to recognize early glaucoma the cause of 12% of all blindness of much more visual disability. A demonstration of tonometry and visual field screening will also be included.

Glaucoma, a prevalent eye disease among older people is a hardening of the eyeball due to increased pressure. Much of the loss of vision from this disease could be prevented through early recognition. The purpose of the exhibit is to encourage the family doctor to check for signs of glaucoma through use of the ophthalmoscope and tonometer during routine physical examinations of persons forty years of age and over. A comparison of the symptoms of the two types of primary glaucoma closed angle (formerly called acute congestive) and chronic simple is made. Tonometry using a standard Schitz tonometer and checking visual fields on the Harrington Flocks Multiple Pattern Visual Field Screener are done on physicians interested in having the tests.



Fields of vision are checked on the Harrington Flocks field screener




OF GLAUCOMA

SIMPLE GLAUCOM

Early

Symptoms - vague or absent
- Possible indefinite eye discomfort
- Central vision usually good
- Side vision defects not noticed

Signs - indefinite
- Tension increased at times
  - 24 hour study necessary
- *Tonography equivocal*
- Cupping of nerve-head questionable
- Field loss small or indefinite
- Provocative tests equivocal

Treatment
- Miotics
- Repeated tension and field studies
- No surgery

Sym
- Ce
- Sid
  not

Signs
- Tension
  normal
- Tonography
- Cupping of ner
- Field loss - may be
- Provocative tests usually po ive

Treatment
- Miotics to improve aqueous outflow
- Other medication to reduce aqueous formation
- Surgery only if necessary to prevent progressive field loss

THERE ARE TWO TYPES OF PRIMARY GLAUCOMA

*CLOSED ANGLE GLAUCOMA (formerly Acute Congestive)

Acute Attacks
- *Red painful eye*
- Blurred vision
- High tension

Diagnosis usually obvious

Patient consults doctor immediately

Requires earliest possible surgery

*SIMPLE GLAUCOMA

Insidious Onset
- *No pain or redness*
- Vision essentially normal
- Tension irregular never *extreme*

Diagnosis difficult in early cases

Patient not aware of early manifestations

Surgery deferred as long as possible

Requires careful continued medical management

*Terms adopted by the Symposium on Glaucoma sponsored by the Council for International Organizations of Medical Sciences Canada Sept 1954

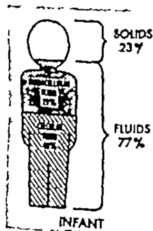
Billings Gold Medal

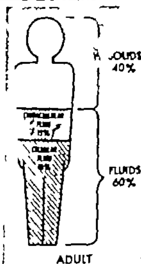
...ation Facts,
...y

...J Sweeney and Martha Wessner,
...al, Evansville, Ind.

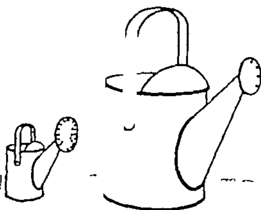
...miliar analogies, and periodically changed case ...lation facts, clinical diagnosis, and therapy of ... The exhibit describes body fluid types, units of ... homeostasis, and cellular physiology It pre- ...the classification and physiological nonrelia- ...ct ...that outlines the body homeostatic mechanisms. ...that ... tailored therapy re covered briefly

I BODY COMPOSITION





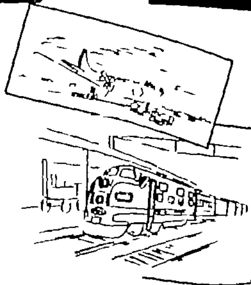
FLUID AND SOLID COMPONENTS OF BODY WEIGHT IN THE ADULT



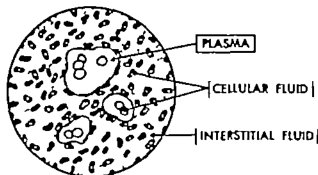
II UNITS OF MEASURE

THE MILLIEQUIVALENT REPRESENTS THE HORSEPOWER OF THE ELECTROLYTE

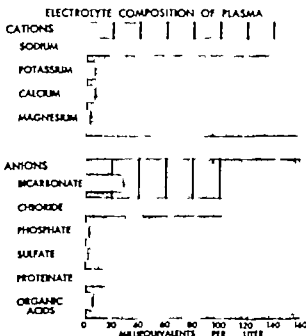
THE UNIT OF MEASURE OF ELECTROLYTES IS THE MILLIEQUIVALENT WHICH EXPRESSES CHEMICAL COMBINING POWER EXPRESSION OF ELECTROLYTES IN MILLIGRAMS IS A WEIGHT MEASUREMENT AND IS UNREALISTIC ONE WOULD NOT COMPARE THE POWER OF AN AIR PLANE TO THAT OF A LOCOMOTIVE ON THE BASIS OF WEIGHT SINCE HORSEPOWER NOT POUNDS MEASURES POWER THE AIRPLANE WEIGHS 45 000 POUNDS AND DEVELOPS 4800 h THE LOCOMOTIVE WEIGHS 230 000 POUNDS BUT DEVELOPS ONLY 1500 h THE UNIT OF MEASURE OF HORSEPOWER IS A HORSE THE UNIT OF MEASURE OF THE MILLIEQUIVALENT IS A CHEMICAL COMBINING POWER OF 1/1000 OF A GRAM OF HYDROGEN

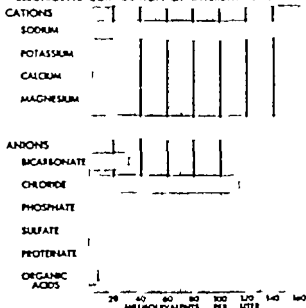


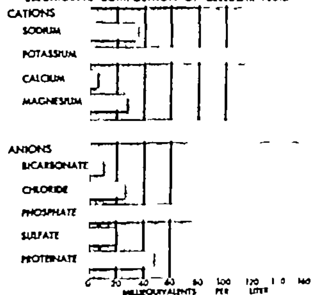
III THE BODY FLUIDS: TYPES AND COMPOSITION



BOD FLUIDS ARE CONTAI ED IN TWO ORE T RESERVOIRS THE EXTRACELLULAR AND CELLULAR. EXTRACELLUL R FLUID INCLUDES PLASM AND INTERSTITIAL FLUID CELLULAR FLUID IS NOT SUBDIVIDED. IT INCLUDES THE FLUID OF ALL THE CELLS OF THE BODY







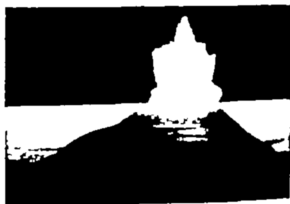
THE ICEBERG ANALOGY

OF

EXTRACELLULAR

AND

CELLULAR FLUID



ELECTROLYTE COMPOSITION OF BODY SECRETIONS COMPARED TO PLASMA

MILLIEQUIVALENTS PER LITER

PLASMA

GAS... ...ETIONS

PANCREATIC SECRETIONS

- SODIUM
- POTASSIUM
- CHLORIDE
- BICARBONATE

GAINS AND LOSSES OF BODY FLUIDS

GAINS

LOSSES

ELECTROLYTE COMPOSITION OF BODY SECRETIONS COMPARED TO PLASMA

MILLIEQUIVALENTS PER LITER

PLASMA

HEPATIC DUCT BILE

JEJUNAL SECRETIONS

- SODIUM
- POTASSIUM
- CHLORIDE
- BICARBONATE

ELECTROLYTE COMPOSITION OF BODY SECRETIONS COMPARED TO PLASMA

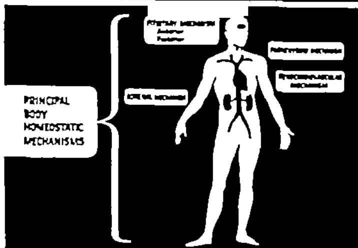
MILLIEQUIVALENTS PER LITER

PLASMA

PERSPIRATION

DIARRHEAL STOOLS—CHILDREN

- SODIUM
- POTASSIUM
- CHLORIDE
- BICARBONATE





HOUSE OF RAPP

IMPAIRMENT OF RENAL MECHANISM

E ISC E

C E GLO ERULO E HR TIS

C RONIC GLO E LO E R IS

M L TOR DISE SE OF
E ID E

EP RO IS

O E O EG C

OS O E T E SE O
S RGE

IMPAIRMENT OF PARATHYROID MECHANISM

I. DER RODUCT O O RO D
OR O E

S C C L E O L

B M R O T ROIDIS

II U E O E D O G S TO E CT
O T OD O O E

III O E ROD C O O RO D
O O E

M ER T OID S

B ORS O T OID GL D

IMPAIRMENT OF ADRENAL MECHANISM

I. I SUFFICIE C OF DRE L CORTEX

DDISO S DISEASE

B CO GE T L D E L YPERPL SI

C DIMINIS ED PRODUCTIO OF CT

II. Y E CTIV T OF T E DRE L CO TE

O ERPRODUCTIO OF CTH

B O O D E L CORTE

C P Y LDOSTERO IS

D O E DOS GE IT ADRE OCO IC L
OR O ES

IMPAIRMENT OF ANTERIOR PITUITARY MECHANISM

I O ERPRODUCTIO OF PITUIT RY HOR O E

CUS ING'S SY DRO E D
CRO EG LY

II U DE PRODUCTION OF PITUIT R O O E

P Y O ITU T RIS

B SIM O DS D SE SE

C S DDE D L O CTH

IMPAIRMENT OF POSTERIOR PITUITARY MECHANISM

DIABETES INS PIDUS

EMOT ON L S RESS

E CESSIVE DR ING OF WATER

INGESTIO OF ALCOHOL

FOLLOWI G EXPOSURE TO COLD

MORPHI E ADMINISTR TION

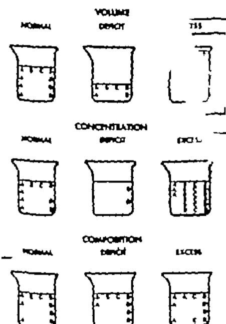
CLASSIFICATION OF BODY FLUID IMBALANCES

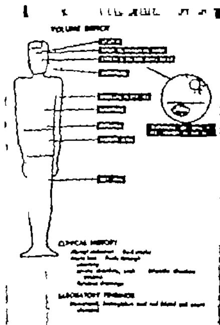
A SYSTEMATIC CLASSIFICATION (ADAPTED FRO MO RE) DIVIDE OD FLUID IMB LANCES INTO T REE PRINCIPAL TYPES

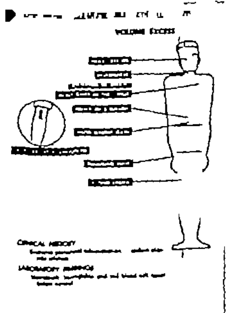
1

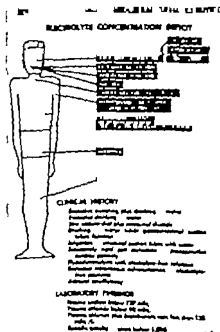
I CH NGES IN PROPERTIES F EXTRACELLULAR FLUID | II CHANGES IN POSIT ON O EXTRACELLULAR FLUID | III C S UTRITION L ST S OOD

I CHANGES IN PROPERTIES OF EXTRACELLULAR FLUID









ELECTROLYTE CONCENTRATION EXCESS

CLINICAL HISTORY

LABORATORY FINDINGS

POTASSIUM DEFICIT

CLINICAL HISTORY

LABORATORY FINDINGS

POTASSIUM EXCESS

CLINICAL HISTORY

LABORATORY FINDINGS

CALCIUM DEFICIT

CLINICAL HISTORY

LABORATORY FINDINGS

CALCIUM EXCESS

CLINICAL HISTORY

LABORATORY FINDINGS

SIMPLIFIED CONCEPT OF ACID BASE BALANCE

I [illegible]

II [illegible]

III [illegible]

IV [illegible]

V [illegible]

PH SPECTRUM OF PLASMA

DEATH ACIDOSIS ALKALOSIS DEATH

6 6.8 7 7.35 7.45 7.8 8 9

BASE BICARBONATE DEFICIT (Metabolic Acidosis)

CLINICAL HISTORY

LABORATORY FINDINGS

Metabolic Acidosis

Metabolic Alkalosis

BASE BICARBONATE EXCESS (Metabolic Alkalosis)

CLINICAL HISTORY

LABORATORY FINDINGS

POTASSIUM

CARBONIC ACID DEFICIT (Respiratory Alkalosis)

CLINICAL HISTORY

LABORATORY FINDINGS

CARBONIC ACID EXCESS (Respiratory Acidosis)

Respiratory Acidosis

CLINICAL HISTORY

LABORATORY FINDINGS

II CHANGES IN POSITION OR DISTRIBUTION OF EXTRACELLULAR FLUID

DISTRIBUTION

NORMAL SHIFT SHIFT

P IF

P — PLASMA
IF — INTERSTITIAL FLUID

CLINICAL HISTORY

LABORATORY FINDINGS

LABORATORY FINDINGS

III CHANGES IN NUTRITIONAL STATUS OF BODY

PROTEIN DEFICIT

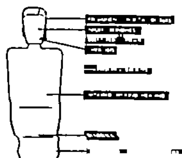
CLINICAL HISTORY

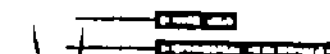
LABORATORY FINDINGS

CALORIC DEFICIT

CLINICAL HISTORY

LABORATORY FINDINGS





CLINICAL HISTORY

LABORATORY FINDINGS

IV LABORATORY VALUES

LABORATORY VALUES USEFUL IN DIAGNOSIS
Specific Imbalances

	Extracellular Fluid Volume: Deficit	Volume: Excess	Concentration: Deficit	Concentration: Excess	Composition: Potassium Deficit	Potassium Excess	Calcium Deficit	Calcium Excess	Base Bicarbonate Deficit	Base Bicarbonate Excess	Carbonic acid Deficit	Carbonic acid Excess	Extracellular Fluid Position Changes, Shift: Plasma to interstitial fluid	Interstitial fluid to Plasma	Nutritional Status Changes: Protein Deficit	Caloric Deficit	Vitamin Deficit
RBC 4.5—6.0 million/cu mm	I	D											I	D	D		
Hb 13—18 Gm/100 ml	I	I											I	D	D		
Hematocrit 37—51%	I	I											I	I	D		
Plasma Na 137—147 mEq/L			D	I													
Plasma K 4.0—5.6 mEq/L					D	I											
Plasma Ca 4.5—5.9 mEq/L							I	I									
Plasma Cl 98—106 mEq/L			I	I						I							
Plasma phosphorus inorganic 1.7—2.6 mEq/L							I	D									
Plasma protein 6—8 Gm/100 ml 16 mEq/L	I	D		I									I	D	D	D	
Plasma albumin 4—5 Gm/100 ml	I	I		I									I	D	D	D	
Plasma HCO_3 Adults 25—? mEq/L Children 20—25 mEq/L									D	I	D	I					
Plasma Cl + HCO_3 125—135 mEq/L			I	I													
Plasma pH 7.35—7.45									D	I	I	I					
Urine pH 6—7									D	I	I	D					
Urine specific gravity 1.010—1.025	S	SS	S	S													

Only the principal laboratory values and their usual trends are listed.

Legend: I increase in this disturbance
D decrease in this disturbance

ILL S O S B K T LEE C L OU F O "FLUID B L CE D800 FO CTITIO E S
B ILLI D E IVEL JR. D. D K EL J S EE E D CO TES OF
C LES C OM S UBLIS E S INGFIELD LLINOIS

THIS EXHIBIT AIDED BY A GRANT FROM ME D JO SON & COMP Y

Honorable Mention

...trol of Cervical Carcinoma by General Population ...reening: The Floyd County Project.

H. E. Nieburgs, Beth El Hospital, N w York.

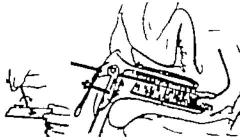
A five-year project on the repeated screening of the female population of Floyd County Georgia, is being presented. The organization of the project, its participation of the Floyd County Medical Society and their members, the Georgia State Health Department, and the local chapter of the American Cancer Society and other groups, demonstrated. The various types of propaganda utilized to reach the population during the conduct of this project are presented. The techni es applied to secure cervical specimens and their management and mailing procedure are illustrated. The organization of laboratory as center for general-population screening is show l detail and includes all steps from the preparation of smear to he interpretation and recommendations made to the physicians of Floyd ounty. The system of recording data pertaining to each patient demonstrated, with presentation of figures in regard to the number of cer ical arcinomas detected on first examination and the number of ce cancers found on repeat examinations in women with previously nega e findings. All data are tabulated according to age groups, race, number of repeat examinations, and number of cervical carcinomas developed early for five years in relation to the number of women examined.

OFFICE PROCEDURES FOR CANCER DIAGNOSIS

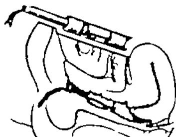
Vaginal Smear

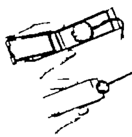


Endocervical Smear

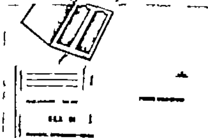


Cancer Detection Tampon and Automatic Preparation of Smear





Mailing of Specimens



The incr asing u of Cytology in physician offic s nd for m reening procedures ha n c itat d simplificat on of th m thod fo th phy ician

A new labor tory p o dure permit the physi ian to omit fixat o of sm ars The mears are simply dried in ai and nt to th laborat ry witho t appli ation of glycerin for th preserv tio of c lls Smears r main sati factory in the d y tat for several we ks

R hydration of mears i also po sible fo pha e cont ast mic o copy Th smears may be allowed to dry and may be late xami ed by placing a cov r slip over a drop of glycerin to which ehydration fluid and h matoxylin h be add d

P epa ation of Rehyd ating Fl id

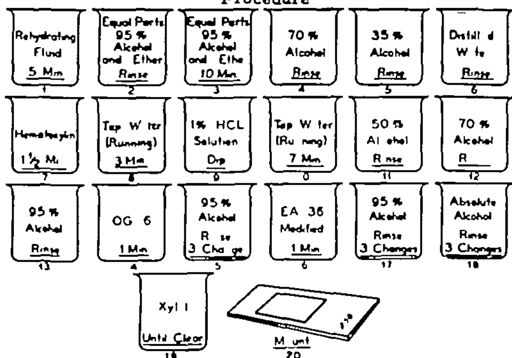
1 Dissol e 0 5 c polyoxyethyl ne Sorb tan Monool te (available as Twe n 80 or Span) in 1 000 cc distilled wat r previously heated Allow to cool befo e u e

2 P pa e a mixture of equal part of 70 pe t alcohol and the

3 Add 25 p r cent of the prepared r hydrating ag nt in distill d w ter to the ther alcohol mixture

For phase cont ast microscopy of dried smears add 5 drops of the rehy drating th r alcohol solution and 5 drops of hem toxylin to 2 ounces of glycerin

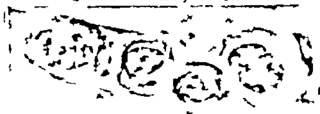
Procedure



Dry Smear Stained



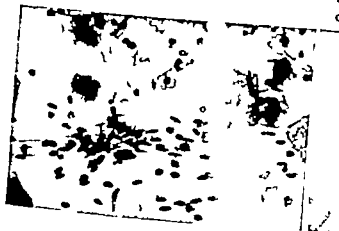
Phase Microscopy of Unstained Dry Smear

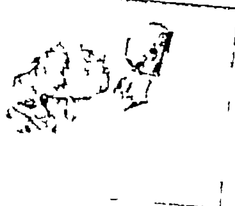


DIAGNOSTIC C ITERIA AND ECOMMEN IONS

Satisfactory endocervical smear

Uns istac o1 ervical
sme r vit of endo-
cerv al ucocytes





CELLULAR CHANGES

RECOMMENDATIONS



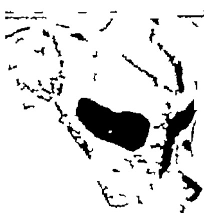
Atypical cells indicative of invasive cancer



Cone or multiple biopsies and endo cervical scraping

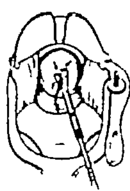


Parabasal cell dyskaryosis indicative of carcinoma in situ possibly invasive cancer

DIAGNOSTIC CRITERIA		RECOMMENDATIONS
	Dyskaryosis in intermediate cells	> Repeat in 3 months
	Dyskaryosis in superficial cells	> Repeat in 6 months
	Makro karyosis	> Repeat in 12 months

BIOPSY PROCEDURES

Schubert Punch



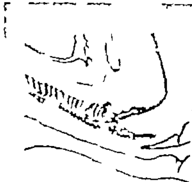
Gellhorn Punch



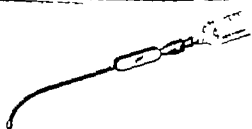
Cold Knife Cone Biopsy



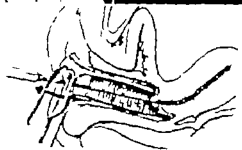
Endocervical Scraping



ENDOMETRIAL SMEARS

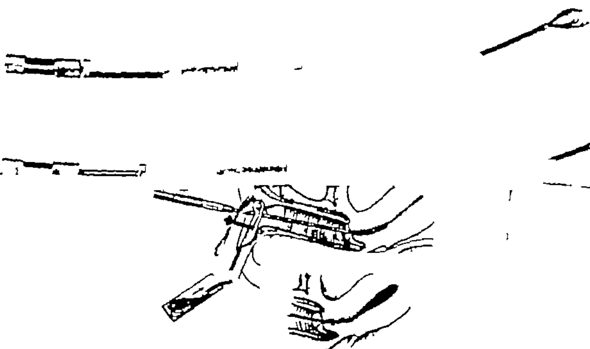


Killian antrum cannula (small size)



Endometrial aspiration

Endometrial Abrasion with Retractable Nylon Fibers



PROPOSED SCHEDULE FOR CANCER DETECTION AND DIAGN NS

Routine endocervical smears regardless of symptoms

*CYTOLOGY NEGATIVE

No symptoms or visible lesion in cervix



↓

Repeat Smear Annually

*CYTOLOGY NEGATIVE

With Symptoms Suggestive of Carcinoma of the Cervix

- Lesion Visible
  Repeat smear and take biopsy
  ↓
  Biopsy and smear negative → Exclude endometrial cancer polyps hormonal causes or others and repeat smears at 6 month intervals
- Lesion not visible
  Repeat smear
  - Smear negative → Exclude endometrial cancer polyps hormonal causes or others and repeat smears at 6 month intervals
  - Smear positive
    ↓
    Cold knife cone biopsy

Exclude endometrial cancer polyps hormonal causes or others and repeat smears at 6 month intervals

*CYTOLOGY POSITIVE

- Lesion Visible
  Single or multiple punch biopsies → Biopsy Negative
- Lesion not visible
  Repeat smear and take cold knife cone biopsy → Biopsy Negative

Biopsy Negative
↓
Repeat smear

- Smear Negative
  Repeat smear in 3 months
- Smear Positive
  Repeat biopsy → Biopsy Positive

Biopsy Positive
↓
TREAT CANCER

This exhibit prepared in cooperation with the Division of Cancer Control and Research, New York City Department of Health

CYTOLOGY REPORT

Slide No. ______ Name ______ Date
Type of Specimen ______ Address ______ Age
Doctor ______ Hosp. or Office No. ______ Race ______
Chief Complaint ______
First day of LMP ______
Duration and regularity ______
Treatment, Past, exp. hormones, radiation therapy ______
Examination (exp. Cervix) ______
Prev. Cyt. and Path. reports ______

A HORMONAL EVALUATION

Suggestive of (1) Indicative of (2) Comparable to (3) Post ovulatory phase (4)
Follicular phase (5) Early (6) Late (7) Non ovulatory cycle (8)
Luteal phase (9) No evidence of ovulation prior to taking of smear (10)
Estrogen deficiency (11) Slight (12) Moderate (13) Marked (14)
Apparently adequate estrogen activity (15) Increased estrogen activity (16)
Possibly previous non ovulatory cycle (17)
Normal hormone levels during pregnancy (18)
Progesterone deficiency (19) Slight (20) Moderate (21) Marked (22) Impending abortion (35)
May normally occur at 3rd month of pregnancy (23)
Non specific smear due to excessive cytolysis (24) If hormonal evaluation desired, repeat following alkaline douches (25)
Post partum During lactation (26) Not lactating (27) Normal (28) Abnormal (29)
Re-established estrogenic function ( ) Slight (30) Moderate (31) Marked (32)
Continued estrogenic stimulation interrupted by episodes of progesterone activity (33)
Protracted estrogen activity possibly slightly decreased (34)

B BACTERIAL CONTENT

Trichomonas infestation (1) Organisms not identified (2) Monilia infection (3)
Leptothrix fungus infection (4) Coccoid bacteria (5) Doederlein bacilli (7) Cytolysis (9)
May be responsible for cellular changes in presence of normal hormone levels (8)

C CELLULAR CONTENT AND BENIGN CHANGES Slight cellular change (1)

Cornified cells (2) Endometrial cells (3) Hyperactivity (4)
Superficial cells (5) Hyperkeratotic cells (6) Sugg. of (7) Increased proliferation (8)
Intermediate cells (9) Histiocytes (10) Ind. of (11) Hyperplasia (12)
Parabasal cells (13) Leucocytes (20) Epithelial dysplasia (14)
Endocervical cells (15) Red Blood Cells (21) Slight (16) Moderate (17)
NO CANCER CELLS FOUND (18) NO ENDOCERVICAL MATERIAL PRESENT (22) Possibly due to inflammation (19)
Squamous metaplasia (23)
Polyp (24)
Adenomatous hyperplasia (25)

D ATYPICAL CELLULAR CHANGES

Nuclear alterations in cells Superficial (1) Intermediate (2) Parabasal (3) Endometrial (4) Endocervical (5)
Possibly associated with (6) suggestive of (7) Indicative of (8)
Marked epithelial dysplasia (9) Early neoplasia cannot be ruled out (10)
Carcinoma in situ (11) Invasion cannot be ruled out (12) Invasive carcinoma (13)
Adenocarcinoma (14) Endometrial carcinoma (15) good (16)
Radiation changes (17) Sensitization response SR (18) Radiation response (19) adequate (20)
poor (21)

E RECOMMENDATIONS

Repeat cytological examinations frequently (1) Immediately (2)
Months 1 (3) 3 (4) 6 (5) 12 (6) Following trichomonas therapy (7)
Multiple biopsies (8) Endocervical scrapings (9) Endometrial biopsy (10)
Endometrial smear by aspiration or lavage action (11)

OTHER FINDINGS

Signed

Dr. H. E. Nieburgs

Cardiac Glycosides: Recent Advances and Their **Application in Therapeutics.**

Arthur C. DeGraff, Leonard B. Guiner, and Lawrence Kayle, New York University and Bellevue Medical Center New York, and Arthur Bernstein Newark, N. J.

A discussion of the indications for digitalization and the basic principles involved is presented in detail. Manifestations of digitalis toxicity are outlined, with emphasis upon certain early common signs and indications of overdosage including progressive heart failure as a sign of toxicity. Presentation of certain neurological manifestations of digitalis toxicity are made. The advantages of different cardiac glycosides are reviewed and their role in therapeutics outlined. Several new cardiac glycosides are discussed and presented in detail.



The Renaissance of Digitalis

The importance of digitalis as a primary agent in the therapy of congestive heart failure has been temporarily eclipsed by the recent emphasis on extra-cardiac agents, whose actions are primarily renal. It is the purpose of this exhibit to re-establish the primacy of digitalis in the treatment of the failing heart muscle and it is our premise that digitalis or one of the appropriate glycosides should be the initial therapeutic agent.

DIGITALIS VERSUS DIURETICS
(IN CONGESTIVE HEART FAILURE)

	DIGITALIS	*DIURETICS*
1. Site of Action	Heart (Major) and Kidney (Minor)	Kidney
2. Cardiac Output	Directly increased.	No primary effect.
3. Venous Pressure	Promptly decreased.	Secondarily decreased
4. Auricular Fibrillation	Slows ventricular rate; protects ventricle	No effect.
5. Mechanical efficiency of Myocardium	Increased.	No effect.
6. Potassium	Re-establishes intracellular potassium equilibrium.	Secondary cellular effects.

The following roentgenograms show reduction in heart size and clearing of congestive failure with a digitalis preparation.

REDUCTION OF HEART SIZE WITH DIGITALIZATION

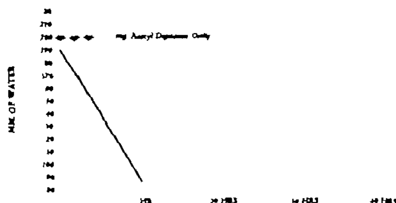


BEFORE DIGITALIS (CEDILANID D WAS THE GLYCOSIDE USED)



AFTER DIGITALIS (CEDILANID D WAS THE GLYCOSIDE USED)

Digitalis Effect on Venous Pressure



The direct myocardial effect manifests itself by the prompt reduction in venous pressure shown below which further makes for the clearing of congestive failure with its associated reduction in heart size.

While it is recognized that diuretics, bed rest and low salt diets may achieve similar results, the action of digitalis is more specific and prompt.

Digitalis or one of the various glycosides should constitute the initial therapeutic approach in the problem of congestive heart failure.

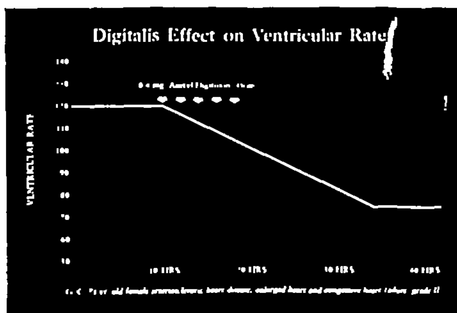
INDICATIONS

A. The primary use for digitalis products is in the treatment of congestive heart failure of any degree, varying from the mildest reduction in cardiac reserve to severe heart failure, regardless of age, etiology of heart disease or the type of rhythm. The presence of active rheumatic carditis or myocardial infarction is not a contra-indication t the administration of the various digitalis preparations.

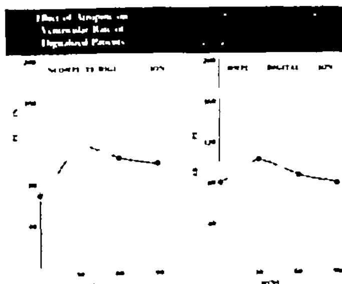
The action of digitalis in myocardial failure is primarily muscular one by virtue of its effect in decreasing the diastolic fiber length through increased spiralling of the actomyosin fibrils and by causing an egress of intracellular potassium, permitting actin and myosin to combine.

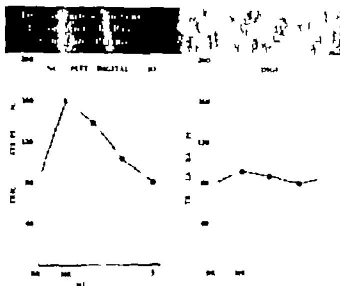
B. Other indications

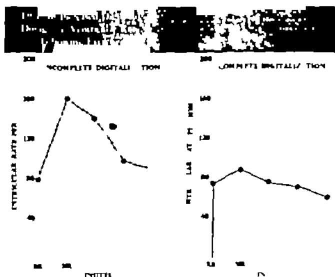
1. Control of ventricular rate in auricular fibrillation.
2. Treatment of supraventricular tachycardia and other arrhythmias.



DIGITALIS EFFECT ON VENTRICULAR RATE IN AURICULAR FIBRILLATION







In the arrhythmias, the action of digitalis is mediated through both vagotonic and musculotropic mechanisms. This dichotomy is demonstrated in Fig. 3 by the slowing of the ventricular rate in auricular fibrillation and in Fig. 4 where atropinization and exercise separate the early vagal action from the still later muscular action.

CONTRAINDICATIONS

The only true contraindication is digitalis toxicity itself.

b. Relative contraindications include
   1. Routine preoperative use in the aged.
   2. High output failure without myocardial insufficiency (anemia, thyrotoxicosis, arteriovenous aneurysm, Paget' Disease, Beri Beri, etc.)

Digitalis decreases the output in the non failing heart and, conversely increases it in myocardial insufficiency

THE CARDIAC GLYCOSIDES

In digitalis, the cardiac glycoside is the active principle; however cardiac glycosides have been obtained from many substances other than digitalis plants, e.g. arrow poisons, rat poisons, bestill nuts nerium oleander and convallaria.

Characteristics of the Cardiac Glycosides

	WHOLE LEAF DIGITALIS	DIGITOXIN	ACETYL DIGITOXIN	GITALIN	DIGOXIN	LANATOSIDE C	DESACETYL LANATOSIDE C	OUABAIN
Onset of action—I.V.		Slow [illegible]		Moderate [illegible] hours	Rapid 15 Minutes		5 Minutes	5 Minutes
Onset of action—oral	Slow 2 hours	Slow 2 hours	Moderate 10 hours	Moderate 6-10 hours	Moderate rate to fast 5-6 hours	Moderate to fast 5-6 hours		
Persistence of Therapeutic Effect	[illegible] days	[illegible] days	10 days	7-10 days	4-5 days	2-5 days	2-5 days	12-24 hours
Toxic effect (Local and Systemic)	Cardiac G.I. Neural Visual	same as digitalis	same as digitalis	same as digitalis	same as digitalis	same as digitalis	same as digitalis	same as digitalis
Duration of Toxic Effects	14 days	[illegible] days	3-5 days	3-7 days	1-3 days	1-2 days	6-12 hours	6-12 hours
Average digitalizing Oral Dose in 24 Hrs.	2.0 grams	[illegible] mg.	2.2 mg.	6.0 mg.	[illegible] mg.	[illegible] mg.		
Maximum safe single I.V. dose		[illegible] mg.			1.0 mg.		0.8 mg.	0.5 mg.
Maximum safe single I.M. dose		[illegible] mg.			1.0 mg.		[illegible] mg.	
Maintenance Dose—Oral	1 to 2 grains	0.1-0.2 mg.	[illegible] mg.	0.5-1 mg.	0.5-0.75 mg.	0.5-1.5 mg. average 1.0 mg.	No tablets	[illegible]

Effect of Carbohydrate Metabolism Upon Digitalis Action

Ventricular arrhythmias may be ..iated or aggravated by oral or intravenous carbohydrate which secondarily produces fall in serum potassium (similar to the hypokalemia observed with mercurial diuresis, gastrointestinal loss, adrenal steroid therapy etc.)

TOXICITY

1 By and large ..ll digitalis preparat..ns, which include all crude extracts, mixtures of extracts and purified glycosides, are similar in their subjective and objective manifestations of intoxication. However there is some recent evidence accumulating that digitoxin exhibits .. greater selective toxic action on the myocardium whereas digoxin and acetyl digitoxin demonstrate more extra-cardiac manifestations.

2. In general, the duration of toxicity once achieved roughly tends to follow the rat.. of dissipation of effect of the particular preparation.

3. With equivalent dosages of all digitalis products any one patient will tend to exhibit similar untoward manifestations.

4 Any particular subjective symptom or objective sign of intoxication may occur as the only manifestation of overdosage or may be combined with any of the other following symptoms and signs and may occur early or late in the toxic range.

5. W.. must caution specifically against thinking that anorexia and nausea are early signs of overdosage for they may never occur dangerous or f..tal ventricular arrhythmias may present themselves without any prior warning and in the absence of any subjective symptoms with any digitalis preparation.

SIGNS AND SYMPTOMS

I. CARDIAC

1. Alterations in irritability
   a. Tachycardia, from any center
   b. Premature systoles from any focus, occurring singly or in runs of coupling.
   c. Change in rhythm .. any form of arrhythmia may be .. manifestation of toxicity due to increased irritability
2. Alterations in rhythmicity
   a. Wandering or shifting pacemaker
   b. Sinus arrest.
3. Alterations in conductivity
   a. Excessive first degree ..trioventricular block is .. common early sign
   b. Varying degrees of atrioventricular block with dropped beat and idioventricula.. rhythm.
   c. Bundle branch block is seldom caused by digitalis
4. Alterations in contractility
   a. Increasing congestive heart failure .. therapeutic paradox.

II GASTROINTESTINAL

1. Anorexia
2. Nausea and vomiting (central effect)
3. Diarrhea (occurs very rarely).

III. NEUROLOGICAL

1. Cerebral
   a. Fatigue, lassitude, insomnia and malaise
   b. Depression, confusion, delirium, and rarely convulsions
   c. Headache
   d. Vertigo
2. Peripheral
   a. Neuralgias, especially of trigeminal nerve.
   b. Paresthesias.

IV VISUAL

1. Alterations in color vision with colored halos
2. Scotomata
3. Blurring, shimmering, micropsia, macropsia.
4 Temporary and permanent amblyopias.

V ALLERGIC

1. Urticaria
2. Eosinophilia

VI ENDOCRINOLOGIC

Gynecomastia (may not truly be .. toxic sign)

TREATMENT OF TOXICITY

1. Cessation of administration of digitalis preparation until intoxication disappears

2. Administration of potassium salts orally or parenterally if necessary when alterations in myocardial irritability and rhythmicity present.

3. The administration of procaine amide if potassium salt in ff ct .. i .. llnis tl g d .. g .. ns arrhythmias.

... with L-triiodothyronine.

... and Xenophon Callas, New York.

... chemical and pharmacological properties of ... and attempts to correlate them with clinical results ... the drug in 100 patients with various metabolic disorders ... thyroid deficiency, hypometabolism without thyroid dys- ... ("metabolic insufficiency"), infertility, intractable edema, etc. ... preliminary results in conjunction with the laboratory findings suggest that apparently through its ability to act at the cellular level, this thyroid-like drug may possess properties that are qualitatively different as well as quantitatively superior to those of conventional thyroid medication. The potential clinical significance of the findings is illustrated in terms of the clinical material studied.

... Rationale of Trypsin Therapy in Acute Inflammatory Disorders.

Irving Innerfield, Irving S. Shubin, and Marcus Feinstein, New York Medical College, New York.

Recent animal studies have shown that an important homeostatic disturbance in acutely inflamed tissue is ... faulty ratio between proteolytic enzymes and macromolecular protein substrates. Trypsin given intramuscularly rapidly corrects this local enzyme and metabolic imbalance. Experimental and clinical data are presented to show the efficacy of this therapeutic modality in inflammatory states encountered daily by the general practitioner; e.g., traumatic edema, localized infections, and respiratory tract infection. The exhibit also features the use of trypsin in postoperative complications (atelectasis, phlebitis).

Evaluation of Xanthine Drugs in Chronic Pulmonary Diseases: Use of a New Respiratory Index.

S. William Simon, Brown General Hospital, Veterans Administration Center, Dayton, Ohio.

The exhibit presents, by means of drawings and charts illustrating the method of obtaining the respiratory index (Simon), the correlation of the amount of dyspnea with the numerical value of the index and the most physiological cause of these various values and the use of this respiratory index in the evaluation of various xanthine drugs used in chronic asthmatic bronchitis, pulmonary and emphysema, compared with placebo in the same patients. The exhibit presents, by means of charts, infor- ... change in blood pressure due ... of the respiratory index over other methods of ... respiratory reserve are illustrated.

... Collagen Diseases.

George Cooper Jr., W. H. Melton and Edward P. Cawley, University of Virginia Hospital, Charlottesville, Va.

The purpose of the exhibit is twofold: (1) to present the clinical features of collagen disease, with emphasis on skin changes and histopathologically demonstrable manifestations, and (2) to explain the pathology behind the clinical features and the interrelationship of these and other collagen diseases. Emphasis is placed on disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis, and scleroderma.

Birth Lesions in Newborn Infants.

Ph. Schwartz, Warren State Hospital, Warren, Pa.

The exhibit illustrates the causes and the pathogenesis of lesions of the nervous system of the newborn infant and deals with the most frequent types of this condition. Cerebral hemorrhages and softening processes can be detected in 65% of the autopsies performed on newborn infants and children ... die during the first four weeks after birth. Lesions of the nervous system in newborn infants induced by birth lesions represent the most important cause of infant mortality. Also, these lesions are of paramount importance in the etiology of feeblemindedness and epilepsy. Prevention of the birth lesion in the newborn infant is one of the most urgent tasks. In this exhibit, not only pictures but also specimens are demonstrated, showing fresh birth lesions—hemorrhages and softening processes—of the brain and their later sequelae.

A Yearly Physical Examination for Every M.D.

This exhibit on physical examinations is presented by the Section on General Practice with the cooperation of the American Academy of General Practice and the National Tuberculosis Association.

The demonstration is made possible by the cooperation and financial assistance of the General Electric X-Ray Corporation.

Examinations and consultations will be made as follows:

Electrocardiogram registration	Space 534
Electrocardiogram tests	*Space 534*
Electrocardiogram consultation	Space 534
X-ray registration	Space 531
X-ray tests	Space 539
X-ray consultations	Space 534

A competent group of consultants will be on duty daily to consult with physicians about the electrocardiograms and x-rays that are made.

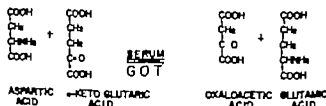
Serum Glutamic Oxalacetic Transaminase (G O T) in Myocardial Infarction

Bernard H. Ostrow, Daniel Steinberg, John M. Evans, and Howard E. Ticktin, George Washington University School of Medicine, Washington, D. C., and National Heart Institute, National Institutes of Health, Bethesda, Md.

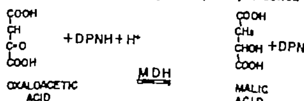
The exhibit shows the principle of the determination and the method (in outline) as well as an assay of glutamic-oxalacetic transaminase (GOT). Typical cases illustrating the value of GOT in differential diagnosis of (a) angina pectoris or coronary insufficiency versus infarction, (b) pericarditis versus infarction, ( ) objective basis for diagnosis when electrocardiogram is masked by picture of old infarction, bundle-branch block, digitalis effect, and (d) detection of extensions. Summary panel gives correlation between clinical and electrocardiographic results and GOT results.

THE PRINCIPLE

The Glutamic Oxalacetic Transaminase (GOT) Reaction



Plus the Malic Dehydrogenase (MDH) Reaction



Measures GOT Concentration Through Rate of DPNH Oxidation

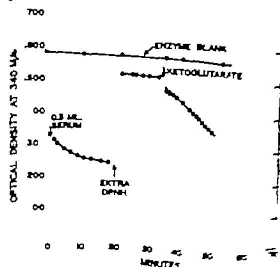
I. MIX

- a. ASPARTIC ACID
- b. PATIENTS SERUM
- c. DPNH
- d. MDH
- e. PHOSPHATE BUFFER

DPNH DISAPPEARANCE DUE TO OTHER ENZYME SYSTEMS

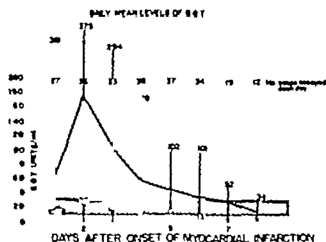
II. AFTER 30 MINUTES ADD

- f. ALPHA-KETO GLUTARATE GOT AND MDH REACTIONS INITIATED DPNH DISAPPEARANCE RATE DETERMINED BY G.O.T. CONCENTRATION.

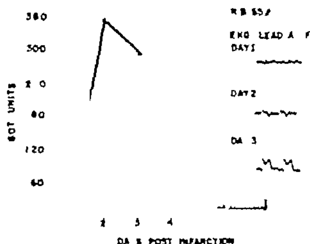


43 Cases – All Had Elevated GOT

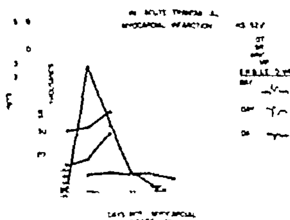
Daily GOT Levels



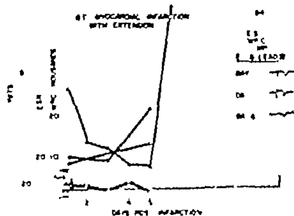
Severe Infarction With Ruptured Septum



Typical Case



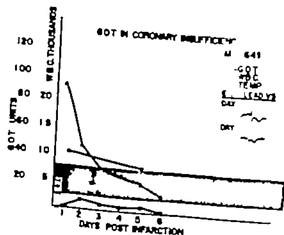
Extension



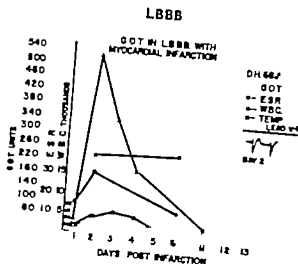
Confirms LaDue Wroblewski and Karmen (Science 1954)

NON DIAGNOSTIC EKG S

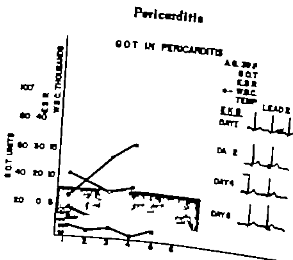
S



LBBB



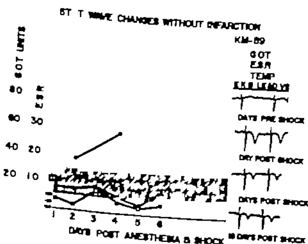
Pericarditis



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ST – T Changes Only

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SUMMARY

OUR FINDINGS

GOT AUTOPSY CORRELATION
201 PATIENTS

TOTAL NO DEATHS 2 AUTOPSY RATE
NO AUTOPSIED 18 75 %

INFARCTION AUTOPSY	GOT INFARCT RANGE	% CORRELATION
12	[illegible]	92

ONE CASE OF MYOCARDITIS

GOT CLINICAL AND EKG CORRELATION IN 201 PATIENTS

EKG	NO CASES	CLINICAL EVALUATION POS	CLINICAL EVALUATION NEG	GOT POS	GOT NEG	% CORRELATION CLINICAL VS GOT
GROUP I ACUTE TRANSMURAL INFARCTION	60	60	0	58	2	97 %
GROUP II NORMAL	18	0	18	4	14	78 %
GROUP III LVH&S MYOCARDIAL ISCHEMIA DIGITALIS EFFECT	77	18 2	10 4	28	 49	84%
GROUP IV SUBENDOCARDIAL ISCHEMIA	5	4		4	1	100%
GROUP V BBB WPW PERICARDITIS OLD INFARCT	41	16 3	4 17	21	 20	83 %
TOTAL	201					88%

GOT ASSAYS ARE

ELEVATED IN

1. ACUTE MYOCARDIAL INFARCTION
2. ACTIVE HEPATO CELLULAR DAMAGE
3. MYOCARDITIS (RHEUMATIC)
4. EXTENSIVE LOBAR PNEUMONIA
5. EXTENSIVE MUSCULAR DAMAGE
6. HEMOLYTIC CRISIS

NORMAL IN (LIVER NOT INVOLVED)

1. PERICARDITIS
2. ANGINA PECTORIS OR CORONARY INSUFFICIENCY ST T WAVE CHANGES ONLY
3. CANCER
4. RHEUMATIC FEVER
5. INFECTIOUS DISEASES
6. ACUTE CHOLECYSTITIS
7. PERFORATED PEPTIC ULCER
8. RHEUMATOID ARTHRITIS

GOT IS A NEW MEASURE OF MYOCARDIAL NECROSIS



Rheumatoid Arthritis.

EUGENE F. TRAUT, CHESTER B. THRIFT, JOSEPH E. ALLEGRETTI, EDWIN W. PASSARELLI, H. PAUL CARSTENS, HARRIET M. CLARK, GEORGE J. GUMERMAN, and ARTHUR R. FISHER, Cook County Hospital, Hektoen Institute for Medical Research and University of Illinois College of Medicine, Chicago.

The exhibit portrays rheumatoid arthritis in its entirety, showing the number of patients with joint disease and giving the synonyms of rheumatoid arthritis. A large illuminated transparency of a patient with severe rheumatoid arthritis is shown, with charts describing modern concepts of etiology, description of its pathology and its symptoms, physical findings, and microscopic characteristics. Charts describe its differentiation from other skeletal diseases, the outlook, and treatment.



PURPOSE OF THE EXHIBIT

THIS EXHIBIT IS PLANNED TO FULFILL THE PURPOSE OF THE AMERICAN RHEUMATISM FOUNDATION, AND THE AMERICAN RHEUMATISM ASSOCIATION

to increase the interest and knowledge of practicing physicians in an important field of joint disease



THE EXHIBIT IS SUPPORTED BY A GRANT FROM THE ILLINOIS CHAPTER OF THE AMERICAN RHEUMATISM FOUNDATION



ACKNOWLEDGMENT IS MADE TO THE FOLLOWING PUBLISHERS FOR THE USE OF ILLUSTRATIONS FROM

RHEUMATIC DISEASES, DIAGNOSIS AND TREATMENT *by* EUGENE F TRAUT
THE C.V. MOSBY COMPANY

and

DIAGNOSIS IN JOINT DISEASE *by* ALLISON *and* GHORMLEY
WILLIAM WOOD *and* COMPANY



SYNONYMS

CHRONIC INFECTIOUS ARTHRITIS

ATROPHIC ARTHRITIS

PROLIFERATIVE ARTHRITIS

CHRONIC ANKYLOSING ARTHRITIS

ARTHRITIS DEFORMANS

STILL'S DISEASE

CHAUFFARD'S DISEASE

STRUMPELL-MARIE SPONDYLITIS

SPONDYLITIS ANKYLOPOIETICA



FROM THE ARTHRITIS CLINIC OF COOK COUNTY HOSPITAL, AND FROM THE HEKTOEN INSTITUTE FOR MEDICAL RESEARCH AND THE COOK COUNTY GRADUATE SCHOOL OF MEDICINE, AND FROM THE UNIVERSITY OF ILLINOIS, COLLEGE OF MEDICINE — CHICAGO ILL.



EXHIBIT DESIGN BY [illegible] MEDICAL ILLUSTRATOR COOK COUNTY GRADUATE SCHOOL OF MEDICINE



ETIOLOGY

ETIOLOGY UNKNOWN

PREDISPOSING FACTORS

CONSTITUTION

Youth or any age

Females

INFECTION



Streptococcal ?

CHEMICAL

Selye s Stress Syndrome (remission in jaundice pregnancy surgery and with cortisone or ACTH)

ENDOCRINE

Dysfunction (hypofunction ?) of anterior pituitary adrenal axis ⟶ ⟶ (infection?) ⟶ ARTHRITIS

ALLERGY

Unstable individuals

54 % history of rhinitis and migraine

19 % history asthma hay fever urticaria

Sensitive to trauma change of temperature fatigue infection barometric changes

A delayed allergic reaction

PSYCHIC DISTURBANCE

PATHOLOGY

SYNOVIAL MEMBRANE PRIMARILY INVOLVED, FORMS "PANNUS"

"Pannus is granulation tissue infiltrated with plasma and lymphoid cells"

PANNUS ADVANCES ACROSS CARTILAGE FROM PERIPHERY, ERODES CARTILAGE



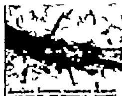
Cell nests (lymphoid infiltration)





HEALING

Adhesions unite joints (ankylosis)
Synostosis later

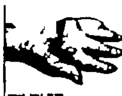




OSTEOPOROSIS



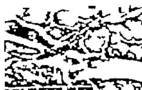
RHEUMATOID NODULE





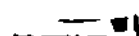
CONCOMITANT SOFT TISSUE CHANGES

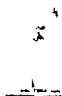
Myositis
Neuritis
Arteritis



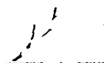


PATHOLOGY












SYMPTOMS & SIGNS

INSIDIOUS ONSET FOLLOWING

Acute infection
Exposure to cold
Emotional strain
Surgical trauma
Fatigue
Unknown excitant



PRODROMES

Weakness
Loss of appetite and weight
Pallor
Transient swelling of fingers on awakening
Numbness and tingling of hands
Low fever chilliness night sweats

LATER SYMPTOMS AND FINDINGS (usual)

Proximal interphalangeal joints
Spindle-shaped swellings
Symmetrical (rarely monoarticular)
Atrophy of hands and whole body
Pain swelling tenderness stiffness
Ulnar deviation
Clammy shiny cyanotic extremities
Ankylosis

Soft tissues
(periarticular and interarticular)

Tender muscles
Nodules
Contractures

PATIENTS















ANKYLOSING SPONDYLITIS









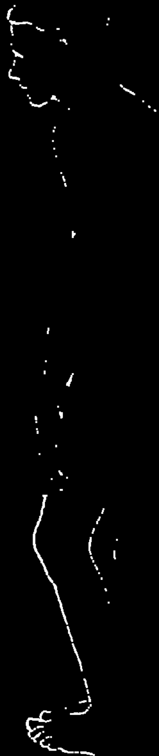




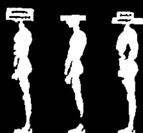




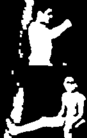




TREATMENT













INFECTIOUS COMPLICATIONS







STEROIDS EXACERBATE

Psychosis

Diabetes mellitus

DIFFERENTIAL DIAGNOSIS
PROGNOSIS

DIFFERENTIAL DIAGNOSIS
RELATIVE CRITERIA

	PATTERN	SEX	AGE	FEVER	SIGNS OF INFLAMMATION	LEUKOCYTOSIS	ANEMIA	SEDIMENTATION RATE
ACUTE RHEUMATIC FEVER	Large joints, [illegible]	Male and female	Childhood	Present	Present	Present	Often	Elevated
RHEUMATOID ARTHRITIS	Small joints, symmetric	Female > male	Youth	Occasional	Frequent	Slight	Microcytic Hypochromic	Elevated
DEGENERATIVE ARTHRITIS	Weight-bearing joints asymmetric	Male and female	Elderly	0	0	0	0	Unaffected
GOUTY ARTHRITIS	Great toe, weight-bearing joints, [illegible]	Male	35 55	In attack	In attack	In attack	0	Elevated in attack
ARTHRITIS IN LUPUS ERYTHEMATOSUS DISSEMINATUS	Rheumatoid pattern	Female	16–40	Present	Present	Leukopenia	Present	Elevated
[illegible] ARTHRITIS	Weight-bearing joints [illegible]	Male	Youth	Occasional	Present	Present	0	Elevated
TUBERCULOUS ARTHRITIS	Weight-bearing joints, monoarticular	Male and female	Childhood	Present	Variable	0	Present	Elevated
TRAUMATIC ARTHRITIS	Asymmetric, monoarticular	Male predominate	Any age		Present		●	Unaffected
CHARCOT	Weight-bearing joints (tabes)	Male predominate	Over 40	0	Present	0	●	Unaffected

PROGNOSIS

DETERMINING FACTORS

PATIENT
- Constitution, intelligence, cooperation
- Type of disease (progressive or remitting)
- Stage of disease

MEDICAL CARE
- Availability
- Enthusiasm
- Quality

FLUCTUATING COURSE
- Remissions
  - Pregnancy
  - Treatment [illegible] long or permanent
  - Focal infection type

DEFORMITIES
- Preventable by education—medical orthopedics
- Reversible by surgery
- Destroyed joints cannot be restored

RELENTLESS PROGRESSION
- Atrophic or neural-dystrophic type

DEATH
- Life shortened severe cases
- From intercurrent infection

GREATER ADVANCES HAVE BEEN MADE IN THE PAST 20 YEARS THAN IN THE PRECEEDING TEN CENTURIES

MEDICAL TEAMWORK
- Clinical investigator
- Endocrinologist
- Biochemist
- Metabolic expert
- Psychiatrist
- Pathologist

GROWTH OF ARTHRITIS CLINICS IN U S
- 150 clinics in 1950
- 250 clinics in 1953

GROWTH OF THE AMERICAN RHEUMATISM ASSOCIATION
- 80 members in 1930
- 600 members 1953

GROWTH OF THE INTERNATIONAL CONGRESS OF RHEUMATIC DISEASE
- 375 participants in 1938
- 600 participants in 1949

Epidemiology of Influenza as Demonstrated by a Study of Serum Pools.

GORONWY O. BROUN and ROSE RITA SCHMIDT, St. Louis University School of Medicine, St. Louis.

At the time of influenza epidemics, changes in antibody level can be demonstrated in serum pools collected by random sampling. Low levels of antibody against the causative strain of virus occur prior to epidemics, and distinct rise in antibodies is noted after the epidemic. Serum pools divided according to the age of individuals contributing to the pool demonstrate the time of disappearance of older virus strains from community. Type of influenza virus currently present in a community can be shown by examination of serum pools of infants.

COMPARISON OF THE SEROLOGICAL CHARACTERISTICS OF INFLUENZA VIRUS STRAINS USED IN THIS STUDY

EXPRESSED IN PERCENTAGE OF ANTIGENIC RELATIONSHIP

SERA TREATED WITH R D E

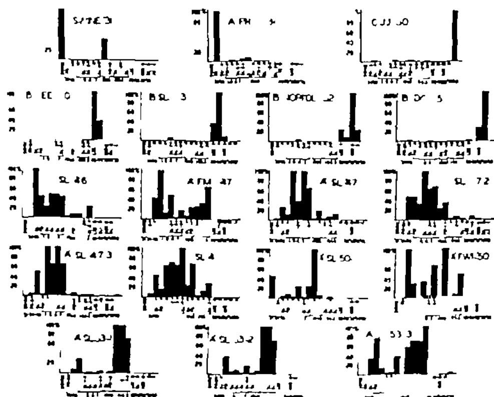


CHART I

EIGHTEEN STRAINS OF INFLUENZA VIRUS WERE USED IN THIS STUDY. THE SEROLOGICAL CHARACTERISTICS OF EACH VIRUS STRAIN, USING THE ANTIHEMAGGLUTININ REACTION AND TESTING THE ANTISERUM AGAINST ALL OTHER STRAINS, IS ILLUSTRATED ABOVE. THE GRAPHS REPRESENT PER CENT OF ANTIGENIC RELATIONSHIP AS DETERMINED BY THE FORMULA OF ARCHETTI AND HORSFALL.

PLAN OF STUDY

We have studied influenza antibody levels in pools of sera collected from individuals observed in hospitals in the St. Louis Metropolitan area continuously since July 1951. Aliquots of serum submitted to the hospital serological laboratories for tests without regard to diagnosis were included in the pools

The hospitals cooperating in the study were Firmin Desloge Hospital, St. Mary's Hospital St. Mary's — Infirmary and St Louis County Hospital. Geo— graphically, the areas from which patients came covered well the entire St. Louis Metropolitan area.

In CHART 2 and CHART 3 the pools were made up of patient's sera of all ages only about 10 per cent being children. Hence, the picture presented is essentially that of adult sera.

In CHART 4 results are shown on pools of sera of infants 4 months to 23 months of age.

In CHART 5 sera of individuals born in a given year or in a given 5 year period are placed in separate pools

CHART 2 AND CHART 3

IN CHART 2 AND CHART 3 monthly pools collected by random sampling—including individuals of all ages averaging in number over 1000 sera per pool were tested for antibody content against 17 strains of influenza virus. The period of study extends from July 1951 to July 1955. During this time the most severe epidemic of influenza was an A outbreak occurring in January 1953. Very mild outbreaks of Type B influenza occurred in the winter of 1952 and the autumn and winter of 1954-1955. The results of this study may be summarized as follows:

1. A rise in influenza antibodies following an outbreak of this infection can be demonstrated in serum pools collected by random sampling. This is demonstrable by the antihemagglutinin test as well as by the complement fixation reaction. This indicates community wide distribution of virus and a high percentage of inapparent infection since only a very small percentage of the individuals from whom serum was collected had influenza or any other recognizable respiratory infection.

2. Pre-epidemic antibody levels against the strain of virus subsequently found to be the cause of an outbreak were lower than against previously isolated serologically related viruses. This suggests that antigenic variation of newly appearing viruses is of more importance in the development of an epidemic than loss of resistance to previously occurring strains.

3. Anamnestic rises in antibody titre occur against viruses serologically related to the causative strain of a given outbreak to a height greater than that developed against the newly appearing virus. In these pools, representing all ages, such a rise is seen after the A epidemic of 1953 not only against other A strains but also against Swine influenza although this is only distantly related to the A virus of 1953.

CHART 2

INFLUENZA ANTIHEMAGGLUTININ TITRE MONTHLY SERUM POOLS - R D E TREATED-ALL AGES INCLUDED IN POOLS

NUMBER OF SERA IN EACH MONTHLY POOL

SWINE

A PR 8 '34

A DSC - ST L #6

A FM-1 #7

A S L #7 4

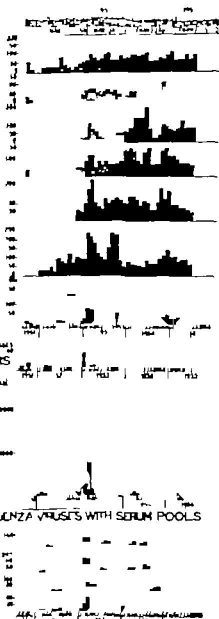
A S L 50

A FWI-50

A S L 53 I

CASES SEROLOGICALLY POSITIVE AS FOUND FOR TYPE A IN OUR LABS IN ST LOUIS

CASES SEROLOGICALLY POSITIVE FOR TYPE A' REPORTED TO W H O



COMPLIMENT FIXATION REACTIONS OF A INFLUENZA VIRUSES WITH SERUM POOLS

STRAIN FM IA

STRAIN ST L #7 4 A'

STRAIN FW-1'50 A'

STRAIN ST L 53 IA

CHART 3

INFLUENZA ANTIHEMAGGLUTININ TITRE MONTHLY SERUM POOLS - R D E TREATED - ALL AGES INCLUDED IN POOLS

NUMBER OF SERA IN EACH MONTHLY POOL

TYPE C JJ

CASES SEROLOGICALLY POSITIVE FOR INFLUENZA TYPE C REPORTED TO W H.O.

CASES SEROLOGICALLY POSITIVE FOR INFLUENZA TYPE C IN ST LOUIS

LEE 1940 B

ST LOUIS 1943 - 1 B

NORFOLK 1952 B

CASES SEROLOGICALLY POSITIVE FOR INFLUENZA TYPE B REPORTED TO W H O

CASES SHOWING FOURFOLD RISE IN H I TITRE FOR TYPE B IN ST LOUIS

INFLUENZA COMPLEMENT FIXING BODIES IN SERUM POOLS IN ST LOUIS

SWINE

TYPE A

TYPE A

TYPE B

TYPE C

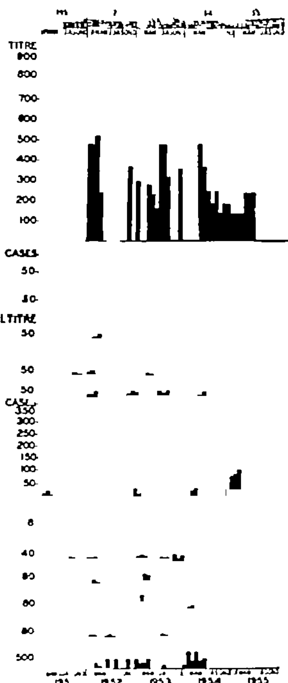


CHART 4

This chart illustrates results obtained with serum pools of infants four months to t enty-three months of age, collected quarterly from 1952 to 1955. Othe studies have shown maternal transmission of influenza antibodies which disappear about the third month of life. These infants hav been exposed only to those viruses present since the time of their b th

The results differ from t se obtained in adult serum pools (Chart 2 and Chart 3) as follows

1. A much higher antibody level w s developed in 1953 against the causative virus of that year's epidemic than against any other virus strain. The anamnestic rise of antibody against related viruses to heights greater than against the causative virus seen in adult pools is absent in the infant pools. Presumably actual previous exposure to these viruses is necessary for the appearance of this phenomenon

2. Antibodies were not found against Swine influenza nor against the Cuppet Strain (A FW-1 50) Antibodies against A S1 50 I do not appear after 1952 This probably indicates lack of exposure to these viruses. There is evidence of exposure to an A virus of the serological characteristic of A FM 1 47 in 1954 and 1955 although no outbreak was recognized clinically at the time. Type C antibodies are at high levels at the beginning and end of the period of observation, but low or absent in 1953 and early 1954

3. Appearance of viruses of new antigenic patterns such as B-Norfolk 52 and B-D.C. 55 do not insure an extensive epidemic since the outbreaks produced were very mild. Hence the factor of virulence is evidently of great importance. Apparently viruses of the antigenic character of B Norfolk 52 were present in both 1952 and 1954 and 1955 Strain B-D.C. 55 was present only in 1954 and 1955

4. Infant serum pools reflect much more accurately than adult pools the viruses actually present in a metropolitan area during a given period of time

CHART 4

ANTIHEMAGGLUTININ TITRE AGAINST INFLUENZA VIRUS IN SERUM POOLS OF INFANTS 4 MONTHS TO 24 MONTHS OF AGE

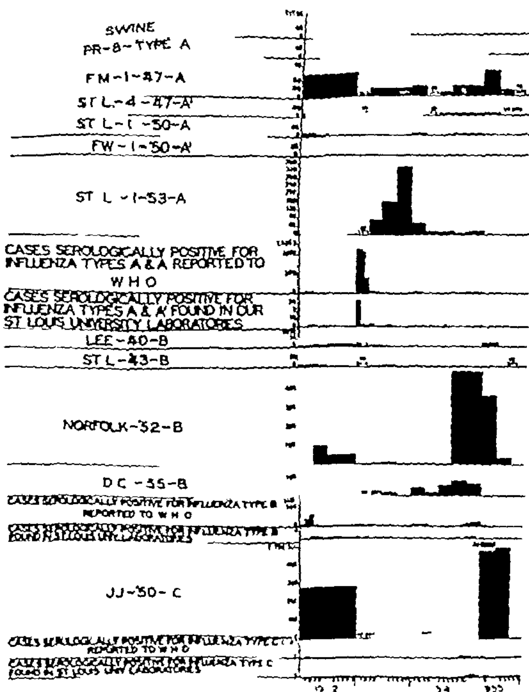


CHART 5

In Chart 5 antibody titres are shown on serum pools collected in the year 1955 a cording to the year of birth of those contributing to the pool The following findings were obtained

1.Some virus strains after being present for a period of years, disappear Note graphs on Swine A PR 8 34 B-Lee-40 and B-SL-43-L

2.Titres of antibody against Swine virus prior to 1918 are high and then decline rapidly and eventually disappear This may mean that this strain was possibly the causative agent of the great pandemic of 1918 1920 as others on similar grounds have suggested

3.Strains of old antigenic patterns may reappear Note strain A S L 50 I which is closely related to Swine virus This strain isolated from a sporadic case of influenza in St Louis in 1950 caused no epidemic and hence must have been avirulent

4 The cuppet strain A FW 1 50 isolated elsewhere appears to have been practically absent from the St Louis area

5 The tendency is noted for those born in recent years to have the highest antibody titre against newly isolated strains and for those born in earlier years to have the highest titre against viruses isolated in years not far removed from their date of birth Irregular high levels of antibody titres against certain strains in the years prior to 1918 may mean periods of earlier prevalence of these viruses

Studies in Headache.

ADRIAN M. OSTFELD, HELEN GOODELL, and HAROLD G. WOLFF. The New York Hospital, New York.

The exhibit consists of (1) photographs and legends describing the cranial artery plethysmograph and slit lamp photographic equipment used in the studies, (2) photographs depicting the behavior of the bulbar conjunctival vascular bed in headache; (3) pulse wave tracings showing the behavior of the extracranial arteries in headaches; (4) charts illustrating fluid and electrolyte balance in the migraine syndrome; (5) charts explaining the experimental evidence in support of the view that there is present locally in the scalp during headache a substance that damages tissue and lowers deep pain thresholds; and (6) charts that illustrate our newer knowledge of the mechanisms and site of action of ergotamine tartrate and nor-epinephrine in eliminating headache.

Course of Sarcoidosis.

MAURICE SONES and HAROLD L. ISRAEL, Henry Phipps Institute Graduate School, University of Pennsylvania School of Medicine, and Woman's Medical College of Pennsylvania, Philadelphia.

The exhibit presents an evaluation of 160 patients with sarcoidosis who have been under observation for periods of time extending to 19 years. The diagnosis in [illegible] cases was supported by histological evidence. Charts depict epidemiological, clinical, and radiological characteristics. Life tables are employed to demonstrate the fate of patients with this disease. The [illegible] variability of the course of sarcoidosis is illustrated by case histories and transparencies of chest roentgenograms. At the end of observation it was noted that 34.7% of 149 patients appeared to have recovered fully, 34.1% had improved, 13.4% remained unchanged, 17.4% had worsened, and 7.4% had died. The presence of tuberculosis was established in 3.4%.

Struma Lymphomatosa: Primary Thyroid Failure with Compensatory Thyroid Enlargement.

PERRY G. SKILLERN, GEORGE CRILE JR., E. PERRY MC CULLAGH, JOHN B. HAZARD, HELEN BROWN, and LENA A. LEWIS, the Cleveland Clinic Foundation, Cleveland.

Struma lymphomatosa has been regarded as a rare type of goiter due to chronic thyroiditis. The exhibit shows the incidence of this type of goiter is not rare and that it is not a true thyroiditis but rather primary thyroid cell failure with compensatory thyroid enlargement due to hyperplasia with or without oxyphilia, secondary lymphocytic infiltration, and fibrosis. The exhibit is based on the study of 50 patients with struma lymphomatosa and consists of descriptions and illustrations of the pathological physiology, clinical features, newer laboratory tests that have resulted in an accurate diagnosis of the disease preoperatively, and pathological studies based on needle biopsy specimens obtained on 12 [illegible] of these patients. Since accurate diagnosis is now available, the treatment of choice is desiccated thyroid, which results in a significant decrease in the size of the goiter as shown by photographs, and corrects both symptomatic and asymptomatic thyroid failure.

Peripheral Arterial Insufficiency: An Evaluation of Vasodilating Measures.

IRWIN D. STEIN, Mount Vernon, N. Y.

A distinction must be made between vasodilating drugs that act on vessels of the skin and those that act on muscle. Most of the ganglionic-blocking agents are primarily skin vasodilators and should be employed in the treatment of areas where skin circulation predominates or where specific effect on such a region is desired, as in the prevention of trophic changes in the digits, the management of Raynaud's phenomenon and of frostbite, or therapy of ulcerating lesions of the hands and feet. In comparison, there are far fewer measures that have an influence on intermittent claudication, the major symptom of muscle ischemia. The exhibit portrays the differences in function between skin and muscle circulation, the regulation of blood flow to each, and the effectiveness of vasodilating measures in common use upon them.

Diabetes Today

HOWARD F. ROOT, ELLIOTT P. JOSLIN, PRISCILLA WHITE, ALEXANDER MARBLE, ALLEN P. JOSLIN, ROBERT F. BRADLEY, and LEO P. KRALL, Joslin Clinic, Boston.

The exhibit presents new data on the use of the orally given hypoglycemic agents and results obtained in the treatment of diabetic coma and in the management of diabetic pregnancy.

Auscultatory Variations in Congenital Heart Disease.

EDMUND H. REPPERT, JOHN J. THORPE, RICHARD HAMILTON, RICHARD HOVDA, C. A. POINDEXTER, and J. SCOTT BUTTERWORTH, New York University Postgraduate Medical School, New York, and THOMAS W. MATTINGLY, Walter Reed Army Hospital, Washington, D. C.

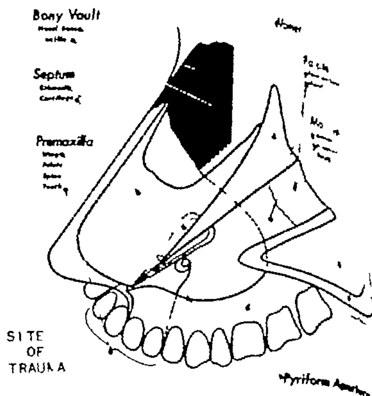
The exhibit demonstrates some of the auscultatory findings in congenital heart disease, as presented from tape recordings through individual stethoscopes, and the simultaneous visual picture is portrayed on the educational electron cardioscope. Additional data necessary to the understanding of each case is automatically flashed on an adjacent screen by a projector synchronized with the tape recordings, and such things as the electrocardiogram, x-rays, angiocardiograms, pressure curves, and other cardiac catheterization data are shown.

Early Nasal Injuries: A Factor in Facial and Dental [illegible]

MAURICE H. COTTLE, C[illegible] G. [illegible]
LORING, Chicago, [illegible] H. [illegible],
and IVAN W. PHILPOTT, Denver.

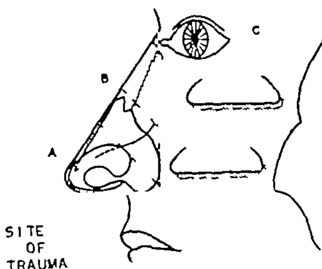
Prenatal, natal, and early childhood [illegible] often, [illegible] trauma, slight fracture [illegible] and [illegible] quantitative and qualitative development of the [illegible] nasal septum [illegible], producing facial [illegible] alignments and dental malalignments [illegible] of the premaxilla and its related structures and [illegible] logical and comparative anatomy [illegible] emphasize the vulnerability of the structures [illegible] forces. Correlation of diagnostic findings [illegible] stressed.

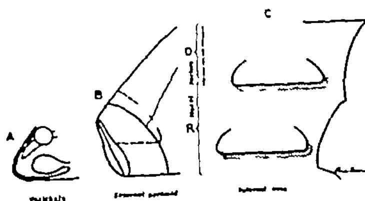
CENTER OF SEPTUM MO[illegible]

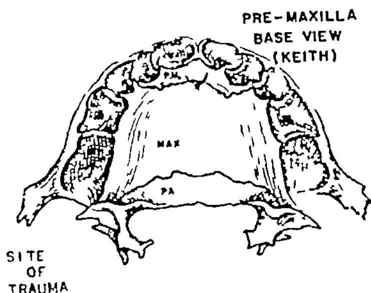


FREQUENT EARLY NASAL DISTURBANCES | NASAL DENTAL FACIAL DEFORMITIES

HUMAN NOSE


C
B
A
SITE
OF
TRAUMA


C
D
B
R
A


PRE-MAXILLA
BASE VIEW
(KEITH)
P.M.
MAX
PA
SITE
OF
TRAUMA

SUMMARY OF EXHIBIT

1 FREQUENCY OF PRE-NATAL NATAL AND EARLY CHILDHOOD NASAL INJURIES IS VERY HIGH

2 THESE INJURIES CAUSE DEFORMITIES OF TEETH PALATE AND FACE IN ADDITION TO DEFORMITIES OF EXTERNAL NOSE AND SEPTUM ALSO DISTURB RELATION OF EXTERNAL NOSE TO INTERNAL NOSE

3 INJURIES CAN ARREST DECELERATE OR ACCELERATE GROWTH OF AN ORGAN OR ANY PART OR PARTS OF IT CHANGES MAY BE OF SIZE (QUANTITY) OR OF DIFFERENTIATION (QUALITY)

4 EARLY FETAL NASAL DISTURBANCES LESS LIKELY TO BE ASSOCIATED WITH DEFORMITIES OF OTHER STRUCTURES

(GREATER TOTIPOTENCE)

5 MINOR INJURIES OF CHILDHOOD MAY CAUSE MAJOR DEFORMITIES LATER

6 EARLY MEDICAL AND SURGICAL CARE ADVISED

7 COOPERATION AND CONSULTATION OF ALL WHO ATTEND CHILDREN IMPERATIVE e g

GENERAL PRACTITIONER
OBSTETRICIAN - DENTIST
PEDIATRICIAN - ORTHODONTIST
RHINOLOGIST - ORAL SURGEON

OCCIPUT-NOSE MEASUREMENTS AT BIRTH FREQUENTLY AS LONG AS OCCIPUT-CHIN MEASUREMENTS OCCASIONALLY LONGER GREATER LENGTH PREDISPOSES TO BIRTH TRAUMA

THE FOLLOWING DATA BY
DR MILDRED JACKSON
AND
DRS KARAYEGEN ERDEM JARA
PEDIATRIC DEPARTMENT
ILLINOIS MASONIC HOSP
CHICAGO

CASE NUMBER	TIME AFTER BIRTH	OCCIPUT TO CHIN	OCCIPUT TO NOSE
1	1 HOUR	12 5 CM	13 0 CM
	7 DAYS	13 0	13 5
2	24 H	13 0	13 0
	4 D	12 5	13 0
3	24 H	14 0	15 0
	5 D	15 0	15 0
4	14 H	12 5	14 0
	5 D	13 0	15 0
5	6 H	11 0	13 0
	2 D	13 0	14 0
6	7 H	12 0	14 0
	3 D	13 0	13 5
7	15 H	13 0	14 0
	4 D	14 0	13 0
8	1 H	13 0	13 5
	4 D	13 0	14 0
9	14 H	13 0	13 5
	2 D	13 5	14 0
10	11 H	12 0	13 0
	3 D	13 0	13 0

DATA BY
DR IRWIN E GAYNON

NO	CHIN – OCCIPUT (m)	CHIN – NOSE (cm)
1	13 8	13 4
2	14 0	14 5
3	14 2	14 0
4	12 9	12 2
5	14 3	14 2
6	13. 6	13 2
7	14 0	13 7
8	12. 8	13 0
9	13. 8	13. 4
10	13 9	13 7
11	11 6	10 8
12	13 4	12 0
13	13 6	13 0
14	14 2	13 1
15	12 8	12 3

INCIDENCE OF BIRTH TRAUMA

	CASES	GROSS CHANGES	FLAT
PHILPOTT DENVER	202	5 8%	68 %
DICKSON HOUSTON	107	6 %	NOT GIVEN
GAYNON MILWAUKEE	100	10 %	52 %
COTTLE et al CHICAGO	300	6 %	38 %

OCCIPUT-NOSE MEASUREMENTS AT BIRTH FREQUENTLY AS LONG AS OCCIPUT-CHIN MEASUREMENTS OCCASIONALLY LONGER GREATER LENGTH PREDISPOSES TO BIRTH TRAUMA

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	7 DAYS	13 0	13 5
2	24 H	13 0	13 0
	4 D	12 5	13 0
3	24 H	14 0	15 0
	5 D	15 0	15 0
4	14 H	12 5	14 0
	5 D	13 0	15 0
5	6 H	11 0	13 0
	2 D	13 0	14 0
6	7 H	12 0	14 0
	3 D	13 0	13 5
7	15 H	13 0	14 0
	4 D	14 0	13 0
8	1 H	13 0	13 5
	4 D	13 0	14 0
9	14 H	13 0	13 5
	2 D	13 5	14 0
10	11 H	12 0	13 0
	3 D	13 0	13 0

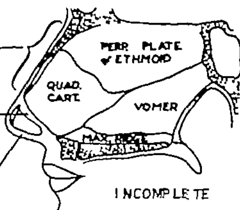
DATA BY DR IRWIN E GAYNON

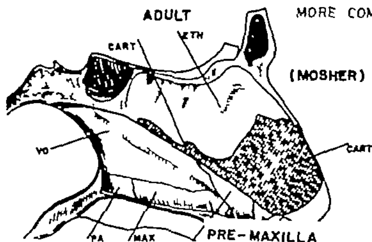
NO	CHIN – OCCIPUT (cm)	CHIN – NOSE (cm)
1	13 8	13 4
2	14 0	14 6
3	14 2	14 0
4	12.9	12 2
5	14.3	14 2
6	13.8	13 2
7	14 0	13 7
8	12.8	13.0
9	13 6	13 4
10	13 9	13 7
11	11 6	10 9
12	13 4	12 0
13	13 6	13 0
14	14 2	13 1
15	12 8	12 3

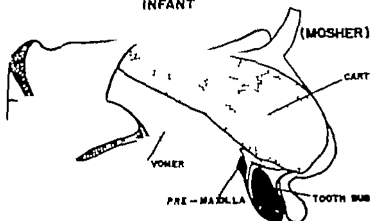
INCIDENCE OF BIRTH TRAUMA

	CASES	GROSS CHANGES	FLAT
PHILPOTT DENVER	202	5 8%	68 %
DICKSON HOUSTON	107	6 %	NOT GIVEN
GAYNON MILWAUKEE	100	10 %	52 %
COTTLE et al CHICAGO	300	6%	38%

SEPTUM ANATOMY













CATALOGUE OF PHOTOGRAPHS

1 Nose absent at birth.
2. One nose Complete absence of righ lateral process.
3 One" nose Right lateral process growing as tubular polyp. Note in the last two no junction mark of maxillary process to median nasal process. (great totipotence)
4. Prosimian-like development of left nasal process. (tube)
5. Marked development o lobule; absent nasal bones. Very little cartilaginous vault.
6. Square nostrils, short columella perpendicular alar feet incomplete nostril ring.
7 Short columella slight bifid tip, inverted triangular nostrils.
8 Markedly bifid nose wide premaxilla and columella Incomplete nostril ring.
9 Bifid tip. Wide nasal chambers.
10. Depressed tip. Pseudocolumella
11 Prenatal. At birth deformity solidly set indicating injury some time before birth.
12. Leans slightly Nose is also pushed down and shows inverted triangle nostrils.
13. Leans considerably Manipulation of nose possible.
14. Natal injury This and the two preceding typical birth injuries.
15 Two year old child. Birth injury not manipulatable and not self corrected by natural growth Many d not correct themselves without interference
16. Normal. Note inconspicuous lumen of airways.
17 Slightly flat. Inverted triangular nostrils.
18. Moderately flat Horizontal nostrils. Note complete nostril rings, also in two preceding cases.
19 Markedly flat Age 14 months. Persistent wide nostrils, short columella, irway much too wide and open.
20 Depressed vault persisting Common sequalia of injuries in this area.
21 Edema. Swelling of soft tissues. No fracture of bones. Estimation of cartilage damage difficult.
22. Hematoma between nasal bones and upper lateral cartilage. Must be evacuated.
23. Fractur soft tissue and cartilage injuries. Both external and internal nose need care.
24 Septal abscess and hematoma following injury
25. Septal deviation Common finding Frequently found in children. Should be corrected early if indicated.
26. Malocclusion limited to one area.
27 Marked malocclusion.
28' Malalignment. (Teeth not well aligned) Nose and septum both need correction.
29 Marked malalignment. Note pper lateral incisors and flattened nose
30. Diastema. Marked space between teeth associated with flat, wide pentagonal nostrils.
31 Alignment of teeth; midsagittal alignment Physiological diastema.
32 Malalignment. Nose and septum to left of midsagittal line.
33 Teeth in good alignments. Nose and teeth practically normal.
34 Teeth in sagittal malalignment
35. Nose—teeth malalignment. Nose to right of midsagittal line Teeth to left. Also malocclusion.
36. Early injury I jury at age I two Evidence of square nostrils. Incomplete nostril ring Teeth malalignment Possible fetal factor
37 Later injury Nose more differentiated. (Earlier nasal injuries seem to produce lesser associated deformities).

38 Nose to right of midsagittal line

39 Moderate diastema. May be within physiological limits. Nose also to right

40 *Septum and teeth malaligned Midsagittal line quite well preserved*

41 Facial asymmetry Associated with nasal and dental deformities.

42. Asymmetry tilt, and rotation of head associated with marked nasal and septal deformities.

43. Head tilt to left with asal, dental and facial asymmetry

44 Faulty posture Neck tilt and shoulders tilted.

45 Pyriform aperture asymmetry also associated with nasal septal, and facial deformities. See No. 73

46 Nasal index. Actually the clinical nasal index.

$$\frac{\text{Width of pyriform aperture}}{\text{nasal height}} \times 100 = \text{clinical nasal endix.}$$

47 Tip index.

$$\frac{\text{Width of lobule at level of apex of nostril}}{\text{greatest width of lobule}} \times 100 = \text{Tip index.}$$

48 Anterior posterior asymmetry A study of the distances of each side of the *face alar facial groo e tip of nose from the back of the head or a central* point in front

49 Vertical angle. Nasale to nasal tip to subnasale

50. Horizontal angle Angle from the tip of the nose to the ends of the widest diameter of the lobule

51 Normal seven year old. Vertical nostrils. Slight lumen.

52 Total arrest Child age nine with very small nose and crowding of teeth.

53 Total arrest Adult, small nose Cartilage vault depression. Cartilage septum not in same sagittal plane as bony septum. Facial asymmetry

54 Ch'ld type. Adult with nasal characteristics of a five year old.

55 Normal adult Pear shaped base. Good nostril ring. Narrow lumen. Long columella Thin alar wings. Good alar labial sulci. Projecting tip.

56. Large nose Almost uniform excessive growth of whole nose.

57 Large bone vault Excessive nasal bone development

58 Projecting septum. Puts nose on stretch. Holds lobule up.

59 OO — test Tip of nose moves down on saying OO — Indicates tension.

60 Round lobule Infantile type Just big Not differentiated into adult form. Large airways.

61 I fantile pyramid. Lobule growing in size poor differentiation. Bone and *cart'lage pyramids not growing at all.*

62 Small nasal bone Otherwise large nose

63 Hypertrophy of tip Bony vault and lobule well developed. Cartilaginous vault depressed and small.

64. Hypotrophy Tip small for rest of nose

65. Wide lobule Marked widening of nose Short columella. Horizontal nostr'ls. Childhood injury Evidence of skin reaction to chronic nasal inflammation.

66 Large deviated nose and septum Childhood injury

67 *Central teeth associated with previous nose Note tooth discoloration associated with mouth breathing*

68 Small nose Childhood injury

69 Lateral incisors associated with previous nose (Malalignment)

70 Bulbous tip Poor nostril ring Short columella.

71 Nose flattened. Palate asymmetrical.

72 Malocclusion associated with previous case Physiological diastema. Wide patent nasal chambers.

73 Unequal internal ostia due to asymmetry of floors of py iform aperture See slide ≠45 and laminograph.

74. Prema illa—palate 1 Prema illa. 2 Ma illa 3. Palatine bone 4 In *teralveolar suture*

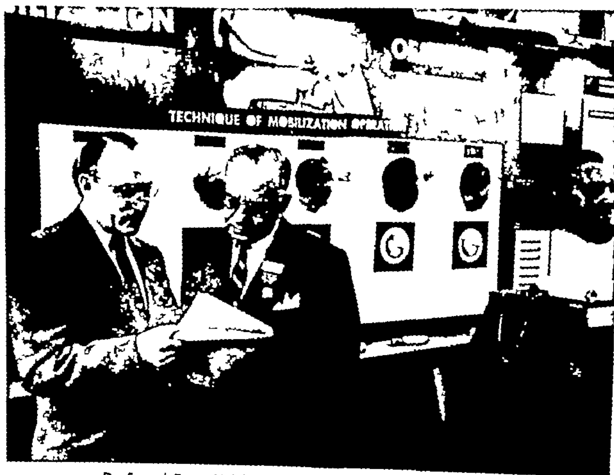
75 Prema illa wing behind nasal spine and between sharply demarcated lateral and inferior edges of pyriform aperture

Hektoen Gold Medal

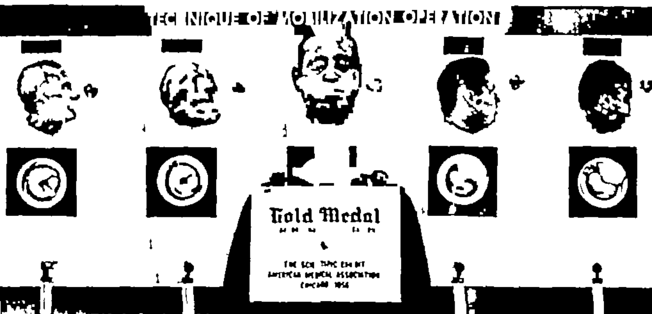
Mobilization of Stapes for Otosclerotic Deafness.

Samuel Rosen, New York.

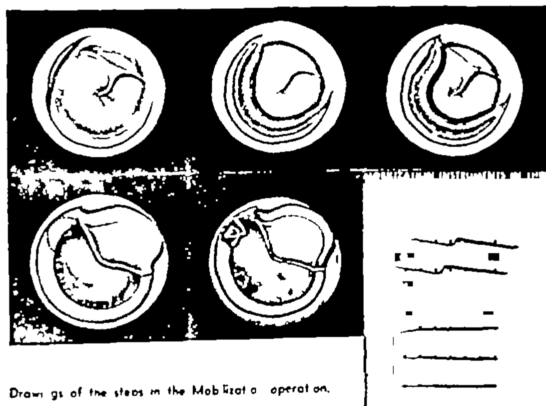
Anatomic specimens demonstrate various stages of the operation as well as the history of the mobilization operation, preoperative and postoperative audiograms, indications and goals of mobilization.



Dr Samuel Rosen (right) and Dr Joseph L. Goldman both of Mount Sinai Hospital, New York.

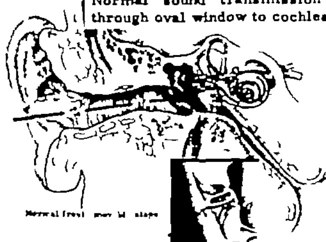


H man specimens showing the steps the Mobilizat on operation.



Draw gs of the steps in the Mob lizat o operat on.

MECHANISM OF DEAFNESS IN OTOSCLEROSIS





INDICATIONS FOR STAPES MOBILIZATION

1. All cases suitable for fenestration.

2. Cases of early otosclerosis not yet operable by fenestration technique.

3. Cases of profound otosclerotic deafness where mobilization can contribute to auditory rehabilitation with or without the hearing aid.

[illegible]

1. Operation performed without pain under local anesthesia through ordinary ear speculum.

2. No shock.

3. Hospitalization 24 hours Resumes work in 1 or 2 days

4. Post-operative treatment - none

5. Patient may swim dive travel by air etc

6. Mobilization failure may be followed by successful fenestration.

[illegible]

1. Otitis media rare

2. Persistent perforation of drum rare

3. Facial paralysis none

4. Labyrinthitis - none

HISTORY OF STAPES MOBILIZATION

1876

Kessel
Boucheron
Miot
Faraci — TECHNIQUE
Blake
Jack
Burnett



1900

1952

Rosen
TECHNIQUE



1876-1900 technique abandoned because of inadequate exposure of stapes. Rosen technique with adequat exposure of stapes permits precise manipulation.

FURTHER DEVELOPMENT OF MOBILIZATION TECHNIQUE:

MOBILIZATION AT THE FOOTPLATE ITSELF

Thi t hnlqu l mploy d wh :

1 St pe footplat too rigid
t mobili t ne k

2 Cre f ctur th
l ing igid footplate



Mobilization of stape
successfully employed
aft r un ucces ful
fenestration

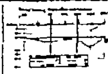


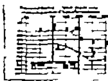
(Above) Represents method of mobilizing the footplate itself also fenestrat on of the oval window itself Hearing improved to 10 db le el Fenestra of oval window probably more effect e than elsewhere

(Below) Successful mobilizat'on of f ed stapes after Lempert fenestrat on failed to improve the hearing

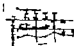
ACHIEVEMENTS OF MOBILIZATION

1. Restor tion of normal hearing





2. Almost normal he ring



3 Restoration of useful binaural hearing

4 Restoring conductive compon ent (stapedial) in mixed deaf nes (ochlear and tapedial)



5. T permit succe sful us of hearing aid in extr me deafness



M bilization of Stapes can restore hearing t the widest spectrum of deafness due t tosclerosis.

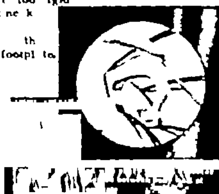
FURTHER DEVELOPMENT OF MOBILIZATION TECHNIQUE

MOBILIZATION AT THE FOOTPLATE ITSELF

Thi t chniqu i mpl y d when:

1 Stape footpl t too igid to mobiliz t ne k

2 Cru f ct th l ving igid footpl te



[illegible]

Mobilization of stapes uccessfully employed aft r unsucce sful f n stration

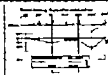


(Above) Represents method of mobiliz g the footplate itself also fenestration of the oval window itself Hearing improved to 10 db level Fenestra of oval window probably more effective than elsewhere

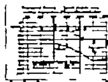
(Below) Successful mobilizat on of fixed stapes after L mpert fenestrat on failed to mprove the hearing.

ACHIEVEMENTS OF MOBILIZATION

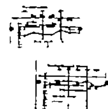
1. R tor tion of normal hearing



2. Almost normal hearing



3 Restoration of useful binaural hearing



4 Re toring onductive compon nt (tapedial) in mixed deaf ne (ochlear and tapedial)



5. To permit cc sful us of he ring aid in extreme deafne



Mobilization of Stapes can restore hearing to the widest spectrum of deafness due to otosclerosis.

I. Total Reaching 30 db or Better — 33%

A Cases (Pre-op maximum bone conduction loss 10db) 48%
"B" Cases(20db) 34%
"C" Cases(30db) 21%

II. Hearing Improved to Various Levels of Usefulness

10 db or more improvement --- 57%
15 db or more improvement ---------------------------- 42%
20 db or more improvement 30%

III. Improved by Mobilization at the Footplate
(When mobilization could not be achieved at the stapedial neck, mobilization at the footplate at once achieved the following additional results)

Improved to 30 db or better 34%
Improved to various levels of usefulness ------------ 55%

IV Revisions

Improved to 30 db or better ------------------------------29%
Improved to various levels of usefulness-----------------60%

V Improved following mobilization but later regressed to pre-operative level 1.7%

VI. Hearing worse than pre-operative level following mobilization [illegible]

Microscopically Benign but Clinically Malignant Lesions of the Head and Neck.

FREDERIC J. POLLOCK, University of Illinois, Illinois Eye and Ear Infirmary and PAUL B. SZANTO, Cook County Hospital, Chicago.

There are a number of tumors observed by otolaryngologists that present a benign histological appearance. Due to their location in proximity to vital structures, tendency to local recurrence, vascularity, destructive character, and other factors, the life of the patient is endangered, just as in histologically malignant tumors. Some representative cases, such as nasopharyngeal fibroma, inverting papilloma, and glomus jugulare, are presented. These are illustrated by histories, clinical photographs, x-rays, and photomicrographs, demonstrating the importance of careful study and evaluation of each individual case. Final decision is determined by the combined efforts of the pathologist and the clinician.

Branchial Anomalies.

G. DONALD ALBERS, Grand Rapids, Mich.

A critical review of all known branchial anomalies will be presented in order to clarify their mode of origin and appraise their clinical significance. Branchial remnants appear in various well recognized regions in the head, neck and chest. Unusual locations, however, require more careful analysis of embryologic development.

Headache: Diagnosis and Treatment.

RAYMOND L. HILSINGER, Cincinnati.

The exhibit of charts, graphs, and models depicts the diagnosis, classification, and treatment of all the headache types known, with special emphasis on vascular headaches.

The Significance of a Lump in the Neck.

EDWARD C. BRANDOW JR., BENJAMIN M. VOLK, and KEITH B. OLSON, Albany Medical College, Albany N Y

The exhibit shows pictures of patients with lumps and masses in the neck, charts classify them into benign and malignant, and statistics show the high incidence of cervical lymph node metastases in carcinoma of the head and neck. Emphasis is placed on the importance of excluding the possibility of a metastasis when dealing with the treatment of a lump in the neck. Diagrams and demonstration show instruments used in the routine search into the blind or often asymptomatic regions such as the hypopharynx and nasopharynx.

Secretory Sialography in Health and Disease.

IRVING M. BLATT, PHILIP RUBIN, JAMES H. MAXWELL, JOHN F. HOLT and JOHN E. [illegible], University of Michigan Medical School, Ann Arbor.

A new modification of sialography is presented. The features of the technique are the use of a polyethylene catheter, a closed system of injection, and physiological reflex stimulation of the salivary gland to evacuate the contrast material. Postevacuation films have revealed patterns that have been of assistance in differentiating between normal and diseased conditions. This method, termed physiological or secretory sialography, has been used to investigate various inflammatory and neoplastic diseases of the salivary glands.

Surgical Anatomy of the Head and Neck.

JOHN M. LORE JR., St. Clare's Hospital, New York.

This exhibit demonstrates the surgical anatomy of the head and neck with sectional x-rays and fluorochrome (color) drawings. These were prepared from cadaver specimens of the head and neck that were cut in sagittal and frontal sections. Each section was then x-rayed. These x-rays are three-dimensional representations of the anatomy. A fluorochrome drawing was made from each x-ray. This exhibit of the anatomy is not an artist's or anatomist's interpretation but is an exact representation of the relationships of the bony and soft tissue structures. The anatomy thus depicted is believed to be of considerable aid to the surgeon.

Experimental Hepatic Surgery Employing Differential Hypothermia.

CHARLES HUGGINS and EDWIN J. CARTER, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md

Sterile saline solution, at temperatures of 4 to 10 C, when poured into the peritoneal cavity of dogs, causes the intestine and liver temperatures to fall to 20 to 25 C within 10 minutes. This type of cooling prior to one-hour occlusion of the abdominal aorta above the celiac axis prevents the gastrointestinal hemorrhage, liver damage, and death seen in normothermic control animals. During the hour of circulatory interruption, large portions of liver may be removed with great ease and low mortality. Details of a safe, simple technique for deliberate liver resection and repair after trauma and the outcome of over 150 animal experiments are presented.

SURGEONS ATTEMPTING HEPATIC RESECTION ARE CONFRONTED WITH

An extremely vascular friable organ
Massive hemorrhage
Intraperitoneal effusion of bile
Postoperative sepsis

CRITERIA FOR EVALUATING TECHNIQUES OF PARTIAL HEPATIC RESECTION

1 The surgeon should have a minimum of 60 MINUTES for deliberate hepatic surgery
2 Ancillary procedures designed to provide the surgeon this time
   A Must be simple
   B Add negligible risk
   C Cause no permanent damage
3 There should be no impairment of liver function nor ability to regenerate
4 Bleeding and biliary leakage should be controlled by individual ligation of the vessels and bile ducts rather than by a technique of mass hemostasis
5 Neither devitalized liver tissue nor foreign bodies should remain at the resection site
6 A technique for partial hepatectomy should permit immediate one-stage resection of pathology discovered at laparotomy
7 The procedure should be applicable in small community hospitals as well as large medical centers

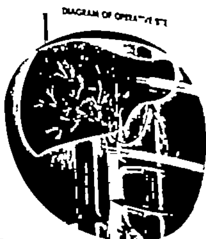
Temporary interruption of hepatic blood flow during partial hepatic resections would appear to offer the best chance of satisfying the above criteria Unfortunately, the poor tolerance of the abdominal viscera to ischemia precludes use of this type of technique at normal temperature

The first 5 groups of experiments were performed in an attempt to devise a procedure that would permit interruption of circulation to the abdominal viscera for one hour

Group I Occlusion of Aorta and Portal Vein at NORM… TEMPERATURE

WILL THE ABDOMINAL VISCERA TOLERATE ISCHEMIA FOR 60 MINUTES?

Study — -



Numbe of Dogs 10

Points of Occlusion

Abdominal Aorta above celiac axis artery
Portal Vein in porta hepatis

Occluded 60 minutes

Mortal ty

9 of 10 dogs died within 48 hours
All dogs passed bloody stools

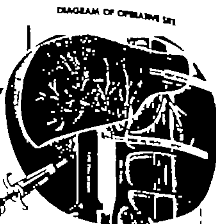
Conclusion

AORTIC OCCLUSION ABOVE THE CELIAC AXIS ARTERY FOR 60 MINUTES AT NORMAL TEMPERATURE RESULTED IN A HIGH MORTALITY

Group II Occlusion of Aorta and Portal Vein at Normal Temperature with POSTOPERATIVE SUPPORTIVE THERA…

WILL POSTOPERATIVE ANTIBIOTICS AND INTRAVENOUS FLUIDS REDUCE THE MORTALITY FOLLOWING … OF OCCLUSION OF THE AORTA AND PORTAL VEIN AT NORMAL TEMPERATURE

Study _ _ _



Number of Dog 10

Points f Occlus on

Abdominal Aorta above the celiac axis artery
Portal vein in portal hepatis

Occluded 60 m nutes

P toper tive Supportive Therapy

1000 cc normal saline I
b 0 2 Gm chloro-tetracycline I
5 million units aqueous penicillin and
0 Gm dihydrostreptomycin I m
d All surviving dogs given 0 5 Gm chloro-tetracycline each day for 5 days

Mortal ty

of 10 dogs died within 48 hours
All dogs passed bloody stools

Concl sion

POSTOPERATIVE SUPPORTIVE ME… TO REDUCE THE MORTALITY FOLLO… UTES OF OCCLUSION OF THE AORTA… VEIN BUT THE BASIC PATHOLOG… CHANGED

Group III INTRAPERITONEAL COOLING

DOES INTRAPERITONEAL COOLING OFFER A MEANS OF DECREASING THE METABOLISM OF THE ABDOMINAL VISCERA WITHOUT PREDISPOSING DOGS TO SHOCK OR INFECTION?

Study

Number of Dogs 10

Cooling Technique

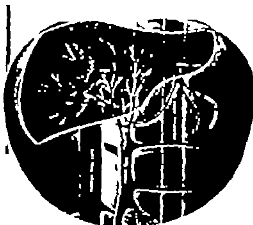
The peritoneal cavity was repeatedly filled with sterile saline at temperature of 2 10 C. The abdominal contents were gently agitated and the saline aspirated. A total of 8-10 liters of saline were used in this fashion. 60 minutes later rewarming was carried out using saline at temperature of 40 45 C. The abdomen was then closed

Mortality None

Pathology

The abdominal viscera appeared normal to gross and microscopic examination at sacrifice three weeks later

DIAGRAM OF OPERATIVE SITE



Conclusion

THIS TECHNIQUE OF COOLING APPEARED SAFE AND DID NOT PREDISPOSE DOGS TO SHOCK OR INFECTION

Group IV Intraperitoneal Cooling PRIOR to Occlusion of the Abdominal Aorta and Portal Vein

WILL THE REDUCTION IN METABOLISM OF THE ABDOMINAL VISCERA AFFORDED BY INTRAPERITONEAL COOLING PREVENT DEATH FROM 60 MINUTES OF OCCLUSION OF THE AORTA AND PORTAL VEIN?

Study

Number of Dogs 10

Points of Occlusion

Abdominal Aorta above the [illegible] artery
Portal Vein at porta hepatis

Occluded 60 minut s

Cooling Technique

The peritoneal [illegible] was repeatedly filled with sterile saline at temperature of 2 10 C. Temperatures of the bowels and [illegible] rapidly fell below 25 C. The aorta and portal vein were then occluded. [illegible] [illegible] was carried out after the occluding clamps were released

Mortality

[illegible] 0 dogs died 3 5 days postoperative

Pathology

a. Cause of death [illegible]
[illegible] 3

b. None of the dogs demonstrated gastro-intestinal hemorrhage nor paraplegia

DIAGRAM OF OPERATIVE SITE



Conclusion

INTRAPERITONEAL COOLING PROTECTED DOGS AGAINST THE ACUTE LETHAL EFFECTS OF AORTIC OCCLUSION. IT DID NOT PROTECT AGAINST THE LOWERED RESISTANCE TO INFECTION CAUSED BY ISCHEMIA

Group V I traperitoneal Cooling prior to 60 minutes of Occlusion of the Abdominal Aorta and Portal Vein with POSTOPERATIVE SUPPORTIVE THERAPY

WILL INTRAPERITONEAL COOLING PRIOR TO 60 MINUTES OF OCCLUSION OF THE AORT AND PORTAL VEIN, FOLLOWED ANTIBIOTICS AND INTR VENOUS FLUIDS, PREVENT DEATH?

Study:

Number of Dogs 10

Points of Occlusion

[illegible]

Occluded 60 minutes

Cooling Technique

[illegible]

Postoperative Supportive Therapy

[illegible]

Mortality None



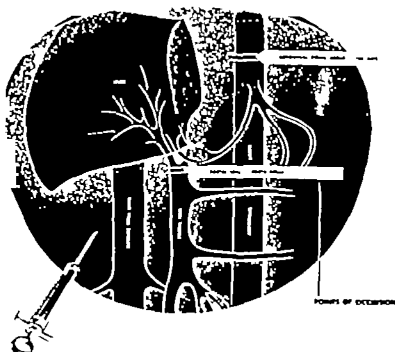
Conclusion

[illegible]

Using the intraperitoneal cooling technique visceral temperatures fell below 25° C within 10 minutes

Gross and microscopic examination of the bowel liver and kidneys of these dogs was normal at sacrifice three weeks following operation

Direct intraperitoneal cooling appeared to offer a safe simple effective means of preventing the lethal effects of 60 minutes of occlusion of the abdominal aorta above the celiac axis



Partial hepatic resections were performed during the period of aortic occlusion without attempting to clamp vessels before transection Hemostasis and control of biliary leakage were obtained solely by individual ligation of the macroscopic vessels and bile ducts

In Group VI an elective resection is simulated

In Group VII an emergency resection for rupture is simulated

Group VI VASCULAR OCCLUSION AFTER COOLING

Study

Number of Dogs 30

Points of Occlusion

- Abdominal Aorta above Celiac Axis Artery
- Portal Vein in Porta Hepatis

Occluded 60 minutes

Specimen Resected 15%-90% of Liver

Postoperative Supportive Therapy

- Antibiotics and Intravenous Fluids

Mortality 8 of 30 dogs died

Cause of De th

Within 48 hours postoperative		From 11 to 18 days postoperative	
Pneumonia	1	Distemper	1
Pneumothorax	1	Enteritis with intestinal perforation	1
Pancreatitis		Jejunojejunal intussusception	1
Hepatic insufficiency following 90% liver resection	1	Peritonitis	1

Pathology

The abdominal viscera of surviving dogs were NORMAL to gross and microscopic examination at sacrifice three weeks postoperative

Group VII VASCULAR OCCLUSION 5 MINUTES PRIOR TO COOLING

Study

Number f Dogs 21

Points of Occlusion

- Abdominal Aorta above Celiac Axis Artery
- Portal Vein in Porta Hepatis

Occluded 60 minutes

Specimen Resected 40% 80% of Liver

Postoperative Supportive Therapy

- Antibiotics and Intravenous Fluids

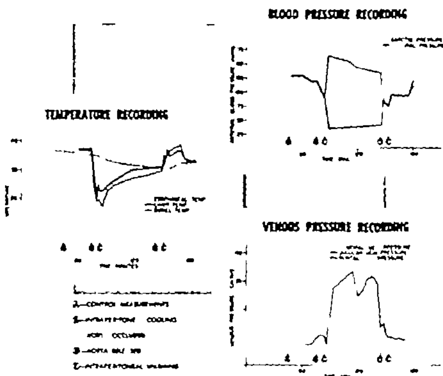
Mortality [illegible] f 21 dogs died

Cause of Death

Postoperative hemorrhage from liver	1
Abdominal wound dehiscence on 5th postoperative day	1

P thology

The abdominal viscera of surviving dogs were normal to gross and microscopic examination at sacrifice three weeks postoperative



The striking features to observe are:

1 The extremely rapid fall of bowel and liver temperatures during the short period of active cooling

2 The modest fall in esophageal temperature

3 The gradual decline of arterial blood pressure during active cooling and return to control values after warming

4 The insignificant change in peripheral venous pressure

SUMMARY AND CONCLUSIONS

1 Aortic occlusion above the celiac axis for 60 minutes at normal temperature resulted in high mortality

2 Postoperative antibiotics and intravenous fluids appeared to decrease this mortality but the basic pathology was unchanged

3 Intraperitoneal cooling appeared safe and did not appear to predispose dogs shock or infection

4 Intraperitoneal cooling protected dogs against gastrointestinal hemorrhage associated with temporary aortic occlusion but not against lowered resist infection

5 Intraperitoneal cooling with postoperative antibiotic and intravenous flui was uniformly successful in preventing the gastrointestinal hemorrhage li damage and death seen in normothermic control dogs following 60 min aortic and portal venous occlusion

6 Large segments of liver were resected with great ease and low mortality the period of vascular occlusion

7 Good results were obtained when vascular occlusion preceded cooling when occlusion followed cooling

8 No cardiac complications or late wound bleeding were encountered.

The authors wish to express appreciation to the following

Captain Robert V Schultz MC USN Mr William C Youn members of the Audio-Visual Aids Section Bureau of Medic U S Navy for their help and cooperation in designing the

Mr Morton J Kuff of Bizarre Creations Washington D C job of exhibit construction

The Pulmonary C in Lesion A Harmless Looking Killer

S. W. FRENCH III, HERBERT J. BERWALD and JOSEPH J. HANSON, Letterman Army Hospital, San Francisco

The exhibit were sol [illegible] of the lungs and their surgical implications. All of these p [illegible] to thoracotomy and their diagnoses ha been confirmed by histologic examination, [illegible], and guinea pig inoculation. The high incidence of carcinoma in these lesions as [illegible] other [illegible] reported by other authors is emphasized. Appropriate [illegible] pe [illegible] of gross specimens removed at thoracotomy [illegible] the [illegible]

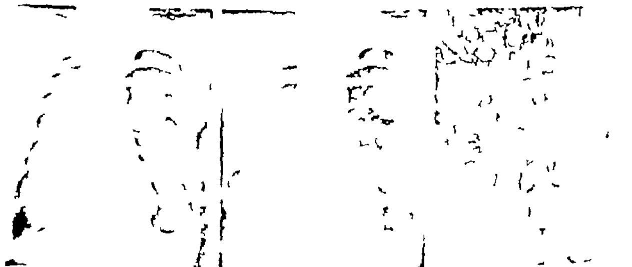
Squamous Cell Carcinoma



[illegible] the left rib [illegible] -old white mal [illegible] (noncompensated anemia) [illegible] of right upper lobe.

This shows the [illegible] enlarging lesion three months later in February 1953.

There has not been much progress [illegible] the [illegible] the lesion in May 1953 [illegible] month after the initial x-ray.



The lesion in Jul [illegible] 54, approximately twenty months after the initial x-ray showing great increase [illegible].

[illegible] lesion in December 1954 [illegible] at thoracotomy proved to be a completely resectable squamous cell carcinoma. He [illegible] 18 months after operation.

The squamous cell [illegible] at lower right portion of a bronchial cartilage at lower left bronchial gland and lymphocytic infiltration here.

Undifferentiated Carcinoma



A rounded, circumscribed lesion overlying the right third anterior rib in a 67-year-old white male who had no symptoms. Immediate thoracotomy was advised.



The lesion four months later when the patient consented to operation. An undifferentiated carcinoma was completely resected. No recurrence 20 months after thoracotomy.



Undifferentiated carcinoma of the right upper lobe.



Columnar epithelial lines the bronchus above. The undifferentiated carcinoma is seen below.



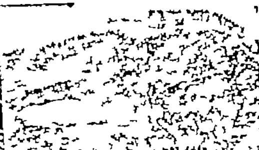
A circumscribed lesion in the upper left lung field in a 64-year-old white male who was asymptomatic.



31 weeks later shortly before thoracotomy. The tumor had grown to the chest wall. A palliative lobectomy was performed. The patient died 6 months later.

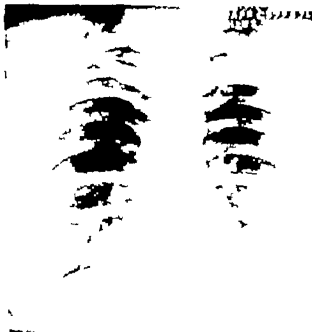


The carcinoma is seen at center.



Columnar epithelium lining the bronchus; undifferentiated carcinoma immediately beneath the bronchial epithelium; [illegible] of carcinoma around bronchial cartilage.

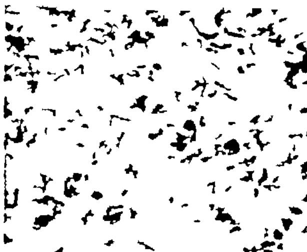
Tuberculoma



A [illegible] lesion overlying the sixth ante[illegible] ... in the lower left lung fi[illegible] of [illegible] 40-year-old white femal[illegible] who was [illegible]ymptomatic.



The lesion i[illegible] [illegible]learly seen overlying [illegible] vertebra [illegible] abov[illegible] the level of the diaphragm.



Acid-fast bacilli in t[illegible] [illegible]sue taken from the le[illegible]ion during thoracotomy.



A satellite tubercle at upper [illegible] enter and an are[illegible] of fibrosi[illegible] and caseation below.



[illegible] lesion [illegible] removed at thoracotomy by resection.

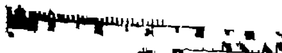
Coccidiomycosis



Lesion in the fourth anterior interspace on the [illegible] in 23-year-old white mal[illegible] without symptoms.

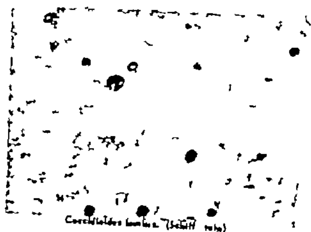


Tomography does not indicate calcium within the lesion.





The gross lesion excised by wedge resection.



Coccidioides [illegible] (Schiff stain)



The organism [illegible] clearly demonstrated in [illegible] upper center

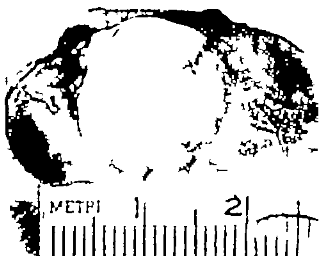
Histoplasmosis



L sion l the lowe right lung field in 24-year-old white mal who was ymptomatic.



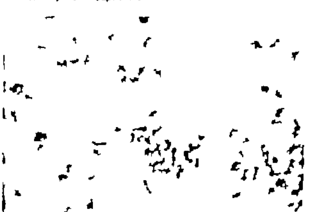
The l sion l learly demonstrated on th l ft anterior blique iew.



Gro ly me lo ion of hi topl most look lik ny ot healed granuloma f the lung.



Hi topl sm capsulatum in its ytre all ter form



H to l m apsul tum in t in reo ll lar form

Chronic Non Specific Granuloma



L sion in the right upper lung field of 40-year-old white mal ithout symptoms.



Tomography did not reveal the presenc of calcium.



Gros lesion as removed at wedge resection.

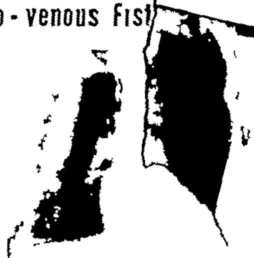


Lung parenchyma at upper right, the ... lesion ... below. All ... and mycoti infections were ...

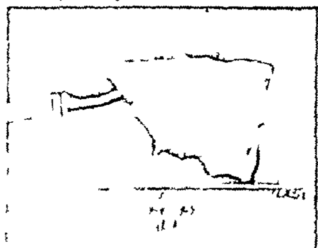
Pulmonary Arterio-venous Fist



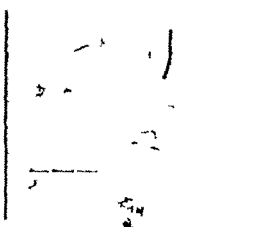
Solitary le ion in lef lower lung field f 30-year-old white f mal , with hemoglobin f 16.7 gm. and light lubbing of the fingers.



Tomography reveal absence of l tur



The gro appearance of the lesion on the xternal urface f the lung after its removal



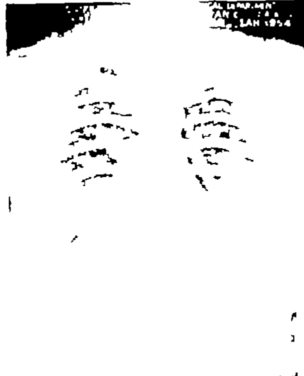
Thi demonstrate i at urgery

the iz f the le ion medium.

Ch Metastasis from Adenocarcinoma of Colon



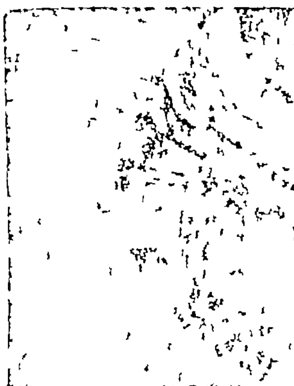
plar rcribed lesion in lower left lung of 48-year-old male, four years after colectomy for carcinoma [illegible] bowel.



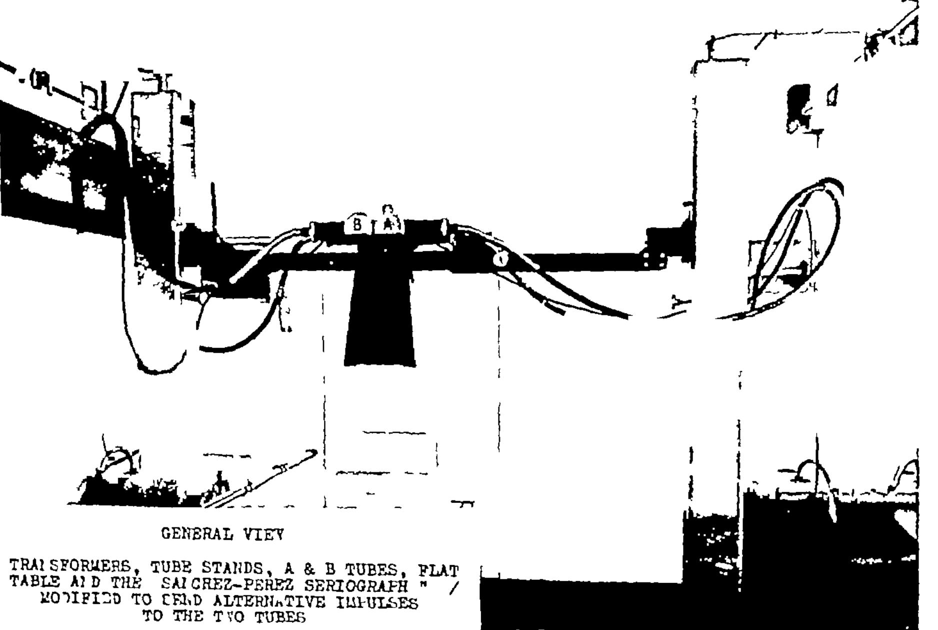
Ten month later th lesion ha become larger



[illegible] of the primary tumor i [illegible] [illegible].

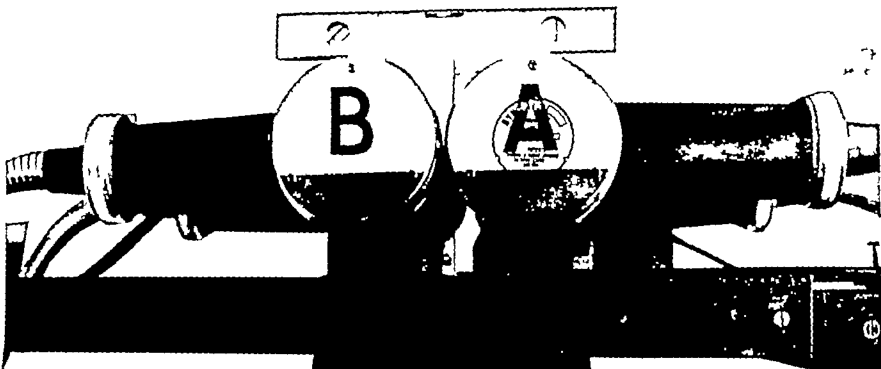


Higher power view of lung metastasis.



GENERAL VIEW

TRANSFORMERS, TUBE STANDS, A & B TUBES, FLAT TABLE AND THE SANCHEZ-PEREZ SERIOGRAPH " / MODIFIED TO SEND ALTERNATIVE IMPULSES TO THE TWO TUBES



CLOSEUP OF THE TWO

TUBES A and B

LEVEL SHOWS THE

SYMMETRICAL POSI-

TUBE B

WILL EXPOSE FILMS 1,3,5

TUBE A

WILL EXPOSE FILMS 2,4 and 6



SITION
RIGGRAPH
DPOINT FOR FOCUSING
2 INCHES
- 40 INCHES









COMPLETE STEREOSCOPIC CEREBRAL ANGIOGR[illegible]

MENINGIOMA OF THE TEMPORAL FOSSA

[illegible]R THE PERCUTANEOUS INJECTION OF 8 cc OF [illegible],
EXPOSURES WERE TAKEN IN 4.5 SECONDS EXP [illegible] 1/[illegible]

THE SANCHEZ-PEREZ SERIOGRA[illegible]
SENDS ALTERNATING IMPULSES TO [illegible]

Simplified Method of Cerebral Angiography

MAURICE I SILVER, Providence, R. I

The principles of angiographic visualization of the cerebral circulation are illustrated, along with a technique that permits use of the procedure in any x-ray department, without the need for special or expensive equipment. The method is performed by a single operator using standard needles, adaptors, and syringes, with irrigation of normal saline solution through a special four-way stopcock that permits continuous contact with the arterial circulation through a closed system. Employment of this technique is described in 800 cases without complication attributable to angiography

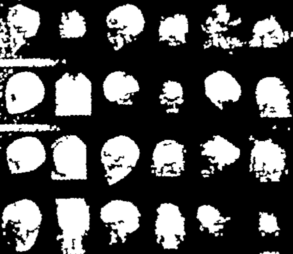
The principles of angiographic visualization of the cerebral circulation are illustrated, along with a technique that permits use of the procedure in any x ray department, without the need for special or expensive equipment The method is performed by a single operator using standard needles adaptors and syringes with irrigation of normal saline solution through a special four way stopcock that permits continuous contact with the arterial circulation through a closed system Employment of this technique is described in eight hundred cases without complication attributable to angiography

Cerebral angiography is a simple safe and rapid procedure that can be carried out in any x ray department, and without involvement of the operating room. The examination is of proven value in a diagnosis of brain tumor cerebral aneurysm cerebral or carotid thrombosis and subdural hematoma In the latter condition, it is of particular value in that the diagnosis can be made reliably from the angiographic films without the need for proposing exploratory trephination

The actual technique used is illustrated by a manikin in which the needle is inserted into the neck and connected with a rubber tube containing colored fluid The method of aspirating blood from the carotid artery maintaining the patency of the needle (#18 spinal) by irrigation with saline and the injection of 35 diodrast was available for direct handling by visitors to the exhibit The injections are facilitated by the use of a special four way stopcock (manufactured by Codman & Shurtleff Inc., Boston, Massachusetts) which permit all of the necessary withdrawals and injection without disconnecting from a closed system. The mechanism of action is diagrammed on the wall of the exhibit

The procedure also facilitated by the use of a short segment of clear polyethylene tubing (Angiotube—Abbott Laboratories Chicago Illinois) permit visualization of the arterial blood and avoid the risk of injecting small clots of air bubbles




OF VALUE
IN
BRAIN TUMOR
ANEURYSM
THROMBOSIS

The age distribution of the eight hundred cases in which thi technique was employed are shown in a graph The youngest patient was eleven months of age and the oldest patient 77 years. A list of *Do s* and *Don ts* emphasizes that it is unnecessary to make an incision to perform the procedure that the highest concentration of diadrast required is 35% and that every precaution should be taken to inject directly into the artery without dislodging the needle Except for minor complications such as hematoma in the neck, and the burning sensation experienced by the patient with the procedure performed under local anesthesia no significant complications (hemiplegia aphasia or death) were encountered

The exhibit illustrates all of the major categories of cerebrovascular pathology demonstrated by this technique A short film strip was also shown at regular time intervals to supplement the actual demonstration of the angiographic procedure

Thymectomy in Myasthenia Gravis.

Robert S. Schwab, Benjamin Castleman, Oliver Cope, Richard Sweet, James Vandervytth, and Henry R. Viets, Massachusetts General Hospital, Boston.

This exhibit emphasizes the complete coordination and integration of the neurological and medical diagnosis, selection and preparation of patients with myasthenia gravis for surgery, the preoperative surgical and anesthetic studies necessary, the anesthesia during the surgical removal of the gland or tumor, the specific surgical technique of the procedure, the immediate postoperative care and precautions, the pathological study of the specimen removed and interpretation of this, and the subsequent evaluation by the neurologist of the effect of such procedures on the remission of his disease. Mortality has been reduced from approximately 40% to less than 5%, the duration of the procedure from three hours to 30 minutes, the postoperative critical period from one week to two days, and the hospital stay from five to two weeks. Results in 170 patients show doubling of the remission incidence in females under [illegible] with little benefit in males or elderly cases.

This exhibit shows the integrated team work of a group of specialists in the successful management of this difficult problem of therapy

Since 1939 we have performed thymectomy on 125 patients with Myasthenia Gravis

In the first ten, four died of post-operative complications, the procedure took three to four hours and the patients were critically ill for several days As a result of our combined experience and the development of a specific technique of collaboration we have reduced the mortality to less than 4% the procedure takes under an hour-- the patients are awake and comfortable during the next hour-- and are taking nourishment that evening

SELECTION OF PATIENTS FOR THYMECTOMY

FOR CONTROLS

I SHOULD CONTAIN:
- SAME DISTRIBUTION OF MILD AND SEVERE CASES
- SAME AGE
- SAME SEX
- SAME DURATION OF DISEASE

II SHOULD <u>NOT</u> BE A MIXTURE OF ALL NON-SURGICAL CASES

FOR THYMECTOMY

I SHOULD BE FEMALE UNDER 35 FOR BEST RESULTS

II SHOULD NOT HAVE HAD MYASTHENIA GRAVIS MORE THAN 5 YEARS

III MUST BE REASONABLY STABILIZED ON DRUG (3 MOS.)

IV MUST BE WELL ENOUGH ADJUSTED ON MEDICINE & IN GOOD ENOUGH PHYSICAL CONDITION TO RISK THE SURGICAL PROCEDURE

HISTORY AND PHYSICAL EXAMINATION

SYMPTOMS

I OCULAR-TRANSIENT DIPLOPIA IN AFTERNOON AND EVENING INABILITY TO HOLD EYES OPEN (PTOSIS) SO HEAD MUST BE HELD BACK TO SEE, ESPECIALLY IN P M

NOTE HEAVY EYES FROM SLEEPINESS OR FATIGUE QUITE DIFFERENT WITH EFFORT EYES COME UP PROMPTLY WITH TRUE PTOSIS THIS IS IMPOSSIBLE

II DYSPHAGIA-FIRST SWALLOW USUALLY ALL RIGHT-AFTER THAT RAPID ONSET OF DIFFICULTY-LIQUIDS RUN OUT OF NOSE-SOLIDS WILL NOT GO DOWN-CHOKING

NOTE: TIGHT FEELING IN THROAT, UNDER STERNUM-GAGGING-QUITE DIFFERENT FROM DYSPHAGIA OF MYASTHENIA GRAVIS

III DYSARTHRIA-NASAL QUALITY TO SPEECH BELOW NORMAL INTENSITY-TENDENCY TO BE CLEAR AT FIRST THEN FADES OUT

NOTE COMPLETE APHONIA NEVER SEEN IN M G-CEREBELLAR ATAXIC SPEECH-SING SONG TYPE-STUTTERING-WHISPER-HOARSENESS ARE NOT CHARACTERISTIC OF THE MYASTHENIC

IV DIFFICULTY IN CHEWING-FIRST BITE IS MASTICATED THEN MUSCLE FAILS-THERE IS USUALLY DIFFICULTY KEEPING JAW CLOSED-HAND MAY BE USED TO HELP FREQUENTLY HEAD FALLS FORWARD THIS PATTERN RARELY SEEN IN OTHER NEUROLOGICAL DISORDERS

V. GENERAL WEAKNESS-COMBING HAIR, SHAVING START OFF ALL RIGHT, THEN MUSCLES FAIL SAME FOR WRITING WALKING-CLIMBING STAIRS THE EXHAUSTION IS LIKE PARALYSIS-NOT LIKE TIREDNESS FROM TOO MUCH WORK SINCE NORMAL FATIGUE CAN BE OVERCOME BY EFFORT

VI. FUNDI & PUPILS NORMAL TENDON REFLEXES NORMAL & EQUAL FASCICULATIONS ARE ABSENT IN TONGUE, OTHER MUSCLES & THERE IS NO ATROPHY SENSORY TESTS ARE NORMAL PYRAMIDAL TRACT SIGNS ARE ABSENT PAIN IS NOT A SYMPTOM

DIAGNOSIS OF MYASTHENIA GRAVIS

I NEOSTIGMINE I M TEST

DETERMINE OBJECTIVE SIGNS WHICH CAN BE EVALUATED SUCH AS INABILITY TO OPEN RIGHT EYE

USE 0 6 I M ATROPINE

(OPTIONAL) PROTECTS G I TRACT

SHOWS EFFECT OF NON-ANTIMYASTHENIC SUBSTANCE (PLACEBO TEST)

AFTER 10 MINUTES USE I 5 MG NEOSTIGMINE I.M

15 MINUTES LATER

FOR POSITIVE TEST

NOTE DEGREE OF OBJECTIVE IMPROVEMENT OF SIGN (ABOVE

IF PRESENT WILL LAST 30 MINUTES

AGAINST POSITIVE TEST

IF IMPROVEMENT LASTS OVER 4 HRS. IT IS A FALSE POS.

CRAMPS IN EXCESS OR SEVERE SIDE REACTIONS (FASCICULATION

II I V TENSILON TEST

USE 5 MG TENSILON I V

IN 30 SECONDS IF NO ADVERSE REACTION USE 5 MG. MORE (10 MG IN ALL)

IMPROVEMENT OCCURS IN I MINUTE AND LASTS 10 MINUTES

III ORAL TRIAL OF NEOSTIGMINE OR MESTINON

MAY BE USED TO CONFIRM DIAGNOSIS--AND EVEN A PLACEBO TRIAL

A DOUBTFUL TEST MUST BE REPEATED

PRE-OPERATIVE MANAGEMENT

A. THE PATIENT SHOULD BE ADMITTED TO THE HOSPITAL FOR SURGERY A FEW DAYS BEFORE THE PROCEDURE SO THAT

1) SOME OBJECTIVE TESTS CAN BE DONE TO INDICATE HIS PERFORMANCE

2) A 24-HOUR PERIOD OF PARENTERAL ADMINISTRATION OF DRUGS USING 1/30 OF THE ORAL AMOUNT IN MG FOR I.M. INJECTION. THE I.M. SHOULD BE GIVEN AS OFTEN AS THE ORAL MEDICATION IS TAKEN

3) PATIENT CAN BE TRIED IN A RESPIRATOR AS A PRECAUTIONARY MEASURE SO THAT IF AN EMERGENCY ARISES THE APPARATUS WILL BE FAMILIAR

NO ONE SHOULD UNDERTAKE THIS TYPE OF SURGERY WITHOUT THE FOLLOWING AVAILABLE FOR POST-OPERATIVE EMERGENCIES:

I AT BEDSIDE
1 LARYNGOSCOPE
2 ENDOTRACHEAL TUBE
3 [illegible] PROSTIGMINE

II ON THE FLOOR:
1 THORACENTESIS SET
2 TRACHEOSTOMY

III IN THE HOSPITAL:
1 ANESTHESIA MACHINE OR POSITIVE PRESSURE RESUSCITATOR
2 MECHANICAL RESPIRATOR

It is ess[illegible]ntial to approach the mediastinum through a midline division of th[illegible] sternum and not from the lateral or posterior aspect. Since the t[illegible]mus lies directly beneath the sternum with lobes that extend down [illegible] up complete removal of the entire gland cannot be done successfu[illegible] [illegible]xcept through the anterior approach. This is true even when a th[illegible]ma is present. It is not necessary to split the entire ste[illegible] [illegible]hood but the splitting should run from the sternal notch

[illegible] [illegible] to a rapid

IMPORTANT POINTS IN THE ANESTHETIC TECHNIQUE ARE

A continuous intra-venous infusion of prostigmin running during the surgery at a rate simulating the I M dosage calculated previously

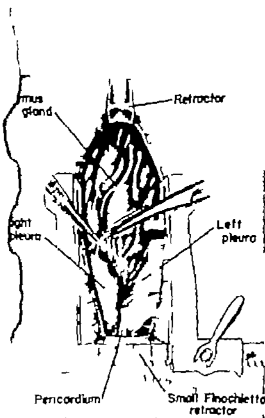
2) No respiratory depressants are used as premedicants (opiates barbiturates) Atropine only is given to control secretions

3) Rapid induction with cyclopropane, topical cocainization of the airway and endotracheal intubation.

4) Maintenance in light anesthesia with assistance or control of respiration by the anesthetist

5) A small I.V and I M dose of an analgesic prior to the end of anesthesia to control post-operative pain

6) Quick recovery from anesthesia so as to permit rapid resumption of an adequate respiratory exchange and early return to oral medication



HE EXPOSURE FOR THYMECTOMY



SPECIMEN REFLECTED FROM WOUND

PRE-OPERATIVE MANAGEMENT

A THE PATIENT SHOULD BE ADMITTED TO THE HOSPITAL FOR SURGERY A FEW DAYS BEFORE THE PROCEDURE SO THAT

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3) PATIENT CAN BE TRIED IN A RESPIRATOR AS A PRECAUTIONARY MEASURE SO THAT IF AN EMERGENCY ARISES THE APPARATUS WILL BE FAMILIAR

[illegible] SHO LD UNDERTAKE [illegible] TYPE [illegible] JRGERY WITHOUT [illegible] AVAILABLE FOR POST-[illegible] EMERGENCIES:

I AT BEDS

1 LA[illegible]OSCOPE
2 E[illegible]RACHEAL TUBE
3 [illegible]ROSTIGMINE

II ON THE FLOOR:

1 THORACENTESIS SET
2. TRACHEOSTOMY

III IN THE HOSPITAL:

1 ANESTHESIA MACHINE OR POSITIVE PRESSURE RESUSITATOR
2. MECHANICAL RESPIRATOR

I is essen ial to approach the mediastinum through a midline di-[illegible]sion o the sternum and not from the lateral or posterior aspect [illegible]e the thymus lies directly beneath the sternum with lobes that extend down and up complete removal of the entire gland cannot be done successfully except through the anterior approach This is true even when a thymoma is present It is not necessary to split the entire ster[illegible] to the xyphoid but the splitting should run from the sternal notch [illegible]-fifths of the way down

The surgeon s contribution to the total care in addition to a rapid mediastinotomy and removal of the gland, lies in the closest possible cooperation with the neurologist and anesthetist in supervision of the post-operative period. He must be ready to undertake surgical measures to help maintain a clear airway (bronchoscopy, tracheostomy)

IMPORTANT POINTS IN THE ANESTHETIC TECHNIQUE ARE

A continuous intra-venous infusion of prostigmin running during the surgery at a rate simulating the I.M dosage calculated previously

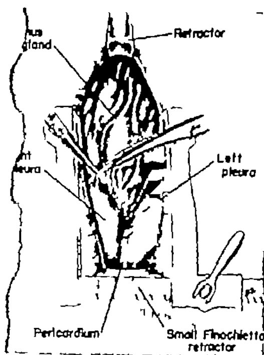
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THE EXPOSURE FOR THYMECTOMY



(a)

SPECIMEN REFLECTED F

THYMIC HYPERPLASIA IN MYASTHENIA GRAVIS

APPROXIMATELY 15 PERCENT OF PATIENTS WITH MYASTHENIA GRAVIS HAVE TRUE NEOPLASMS OF THE THYMUS GLAND--TUMORS THAT WE PREFER TO CALL THYMOMAS OF THE REMAINING PATIENTS ABOUT 20 PER CENT HAVE THYMUS GLANDS THAT, SO FAR AS CAN BE DETERMINED GROSSLY AND MICROSCOPICALLY, ARE COMPLETELY WITHIN NORMAL LIMITS, SHOWING VARYING DEGREES OF INVOLUTION THE OTHER 80 PERCENT HAVE ABNORMAL THYMUS GLANDS MICROSCOPICALLY, ALTHOUGH THE GROSS APPEARANCE AND WEIGHTS OF THE GLANDS ARE USUALLY WITHIN NORMAL LIMITS (FIG 1)

MICROSCOPICALLY, THE STRIKING FINDING IN THE THYMUS GLAND OF THESE 80 PERCENT IS THE PRESENCE OF GERMINAL CENTERS IN THE MEDULLA (FIG 2)--GERMINAL CENTERS THAT ARE EXACTLY LIKE THOSE OBSERVED IN ANY LYMPH NODE (FIG.3)



FIG 2 LOW POWER PHOTOMICROGRAPH SHOWING ABSENCE OF INVOLUTION NUMEROUS LYMPH FOLLICLES WITH GERMINAL CENTERS IN MEDULLA AND COMPRESSION OF CORTEX



FIG 23 HIGHER MAGNIFICATION OF A TUMOR SHOWING A MIXTURE OF SPINDLE-SHAPED CELLS WITH LYMPHOCYTES

FIG.10 A RE
THYMOMA
THE THYM
SURROUNDI
ON SCHEM
DEMONST

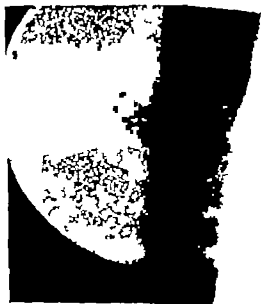


FIG 22 SPINDLE-SHAPED CELLS SIMULATING CON TISSUE STROMA

rent electroencephalographic brain pathology with begin- age leading to the end-stage, ma, is hard to diagnose by aphy is prognostic and treat- ir

logy

PAUL PILCHMAN, Montefiore

over 5,000 patients who were therapy. Charts and diagrams the effectiveness of pharmaco- on the patient and the patient on ing of drugs; (3) description of the specific headache entities, ion) post-traumatic, and head- (4) an appraisal of drugs in

rans Administration Hospital,

he special problems of psychiatric thods in general medical practice, and the need for further efforts rstanding between psychiatrists and

the Institutional

AL M. ROSENBERG Columbus s, Ohio.

of clinical evaluation of chlor rent individuals at the Columbus ects of their response on the hos- cated, the drug produced signifi- ues, in terms of hospital adminis- property less need for "security" supervision to active medical and with these patients, it meant ractive therapy and less time of trouble.

rome.

NDIARIAN, Western Reserve dicine and City Hospital

serial air studies and angio- illustrative diagnostic x-rays

us syndrome presented. The results of medical and surgical nique is outlined, and drawings

ement of Anxiety

H F FAZEKAS, PAUL D SULLIVAN, LA, District of Columbia General ton, D. C.

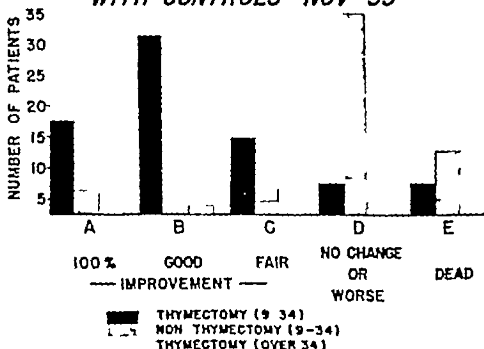
rate the pharmacology and clinical effectiveness ethiazine derivative in the management of The conditions that are demonstrated include alcohol withdrawal syndromes, (2) disturbed (3) narcotic addicts experiencing withdrawal

CRITERIA FOR EVALUATING RESULTS OF THYMECTOMY

1. TRY TO GET PRE-OPERATIVE PATTERN STABILIZED OR FREE OF REMISSIONS FOR 6 MONTHS
2. IN POST-OPERATIVE COURSE WE DO NOT RECOMMEND OR INCLUDE FOR THE NEXT 6 MONTHS ANY MARKED ALTERATION IN THERAPY EXCEPT FOR INCREASE OR DECREASE IN AMOUNT OF MEDICINE
3. LOOK FOR CLEAN CUT REMISSION EITHER PART OR COMPLETE WITHIN FIRST 12 MONTHS POST-OPERATIVE CLASSIFIED AS
   - A — 100 % IMPROVEMENT (NEEDS NO MEDICINE AND HAS NO SYMPTOMS)
   - B GOOD IMPROVEMENT (SIGNIFICANT REDUCTION IN MEDICINE & MILDER SYMPTOMS)
   - C FAIR OR SLIGHT IMPROVEMENT (MOSTLY SUBJECTIVE)
   - D NO CHANGE OR WORSE
   - E — DEAD FROM COMPLICATIONS OF MYASTHENIA GRAVIS

CRITERIA FOR EVALUATING CONTROLS

1. REMISSION MUST NOT BE THAT DUE TO INITIAL ADJUSTMENT ON THERAPY OR SUBSEQUENT READJUSTING OF THERAPY SINCE SURGICAL CASES WILL HAVE THIS AS WELL
2. REMISSION MUST BE SUSTAINED FOR ONE YEAR. MUST BE CLEAR CUT & SPONTANEOUS THAT COMES SUDDENLY OR GRADUALLY OVER A YEAR PERIOD
3. DEATHS THAT CHANGE EVALUATION RATE MUST BE DUE TO M G OF CONTRIBUTED TO BY MYASTHENIA GRAVIS NOT DUE TO TRAUMA OR OTHER CRISIS OR DISEASE



Short Course in Diagnosis and Treatment

W. SHELDON Cleveland.

A portrayal with representative cases of patients who were ... The often unrecognized ... medical diagnosis of the stroke ... All ... need ... stroke is not ... is stressed ... specific tests in ... neurological evaluation ... Many lives can be saved and ... arrive at the proper diagnosis. Many of these cases that are ... disabilities reduced by proper management of these cases that are commonly encountered in the practice of medicine.

Ocular Aspects of Intracranial Arterial Aneurysms.

JOSEPH E. ALFANO, Northwestern University Medical School, Chicago.

Ocular signs and symptoms may be the first indication of an aneurysm of the circle of Willis. The anatomy necessary for the diagnosis of these lesions is presented. Transparencies showing the ocular signs, as well as arteriograms, are presented.

Age Changes in the Human Nervous System.

WARREN ANDREW Bowman Gray School of Medicine, Winston-Salem, N. C.

Color transparencies made from photomicrographs illustrate the differences between nerve cells of young and old persons. The occurrence of alterations common to cells in almost all parts of the nervous system is stressed. At the same time, it is shown that specific groups of cells often show specificity in type of change, in time of onset of the age change, or in rate of its progression. Some changes are not degenerative but rather reactive.

Alterations in the Central Nervous System Associated with Various Fungus Infections.

LOUIS D. BOSHES, IRVING C. SHERMAN, CHARLES J. HESSER, ALBERT MILZER, and HELEN MACLEAN, Michael Reese Hospital and Northwestern University Medical School, Chicago.

Five cases of widespread invasion by fungous organisms are presented including three cases of torulosis, one of coccidioidomycosis, and one of aspergillosis in which there was joint infection with Candida albicans that was ... disseminated process involving many tissues and also producing multiple granulomatous abscess ... throughout the brain. History, mycology, treatment, and pathology are discussed. Prints of gross and microscopic ... as well as bacteriological smears and tissue cultures of selected areas in the central nervous system are shown, together with plastic-embedded gross specimens of each case. Diagrams built from the clinical and laboratory points of view ... presented, with management, including symptomatic and supportive care, the use of various antibiotics, corticotropin therapy, 2 ... and ...

Laryngospasm in Electroshock.

E. J. FOOTE, J. T. McCLOWN and KENNETH HINDERER, Veterans Administration Hospital and University of Pittsburgh School of Medicine, Pittsburgh.

Laryngospasm of severe intensity occurs during the apneic phase of every electroconvulsive treatment, average duration being approximately one minute. The complication of prolonged apnea with laryngospasm may produce cardiac as well as cerebral pathology. Conclusions are that (1) control of laryngospasm and the maintenance of clear airway constantly confronts the electro-therapist as well as the anesthesiologist; (2) adequate premedication, muscle relaxants, ... methods, and emergency mechanical methods, should be used or at hand and (3) in our experience, prolonged apnea, beyond ... minutes duration, should require immediate intervention for relief of airway.

Alcoholic Brain Disease.

A. E. BENNETT, L. T. DOI, and G. I. MOWERY Berkeley, Calif.

The statistical importance of alcoholic brain disease is shown as replacing the former incidence of neurosyphilis in state hospitals. The use of electroencephalography in the diagnosis of alcoholic brain disease is demonstrated. Transitory abnormal electroencephalograms correspond to the acute state of alcoholic intoxication, including the acute period of delirium tremens. ... remaining persistent electroencephalographic findings indicate the presence of irreversible brain pathology with beginning cerebral atrophy. The intermediate stage leading to the end-stage such as Korsakoff's or Wernicke syndrome, is hard to diagnose by clinical findings alone. Electroencephalography is a prognostic and treatment guide in early alcoholic brain disease.

Treatment of Headaches: Pharmacology

ARNOLD P. FRIEDMAN and SAMUEL PLECHMAN, Montefiore Hospital, New York.

The exhibit reviews experiences with over 5,000 patients who were treated for chronic headache by pharmacotherapy. Charts and diagrams demonstrate (1) factors responsible for the effectiveness of pharmacotherapy including the effect of the drug on the patient and the patient on the drug; (2) ... method of clinical testing of drugs; (3) ... description of the clinical picture and mechanisms of the specific headache entities: migraine, tension (muscular contraction), post-traumatic, and head aches associated with hypertension; and (4) an appraisal of drugs in these specific headache entities.

Referral to a Psychiatrist.

RAYMOND L. REDICET Veterans Administration Hospital, Topeka, Kan.

The exhibit shows, respectively, the special problem of psychiatric referral, the use of psychological methods in general medical practice, the processes of psychiatric referral, and the need for further efforts toward better communication and understanding between psychiatrists and general practitioners.

The Effect of Chlorpromazine on the Institutional Care of Retarded Children.

JUDITH H. RETTIG and CARL M. ROSENBERG, Columbus State School, Columbus, Ohio.

The basic data for this exhibit consist of clinical ... of chlorpromazine in disturbed mentally deficient individuals at the Columbus State School and an analysis of the effects of this response on the hospital itself. In the majority of patients treated, the drug produced ... cant improvements in behavioral symptoms. In terms of hospital administration, this meant less destruction of property, less need for ... ... shift from custodial supervision to a more medical and psychiatric care. For personnel in contact with these patients, it meant better morale, greater emphasis on constructive therapy and less ... spent in merely keeping the children out of trouble.

Progress Radiographs in Cranial Trauma.

HARRY W. SLADE and SIMON SPENDARIAN, Western Reserve University School of Medicine and City Hospital, Cleveland.

The exhibit ... consists of translights of serial ... grams of cases of subdural hematoma and illustrates diagnostic x-rays ... translights, and operative photographs.

Scalenus Anticus Syndrome.

AVERILL STOWELL, Tulsa, Okla.

A series of 131 cases of scalenus anticus syndrome ... presented. The differential diagnosis is stressed and the results of medical and surgical treatment discussed. The operative technique is outlined, and drawings illustrate the techniques involved.

Use of Promazine in the Management of Acutely Disturbed Patients.

JOHN D. SCHULTZ, JOSEPH F. FAZEKAS, PAUL D. SULLIVAN and JAMES G. SHEA, District of Columbia General Hospital, Washington, D. C.

Diagrams and pictures illustrate the physiology and clinical effectiveness of promazine, ... phenothiazine derivative in the management of acutely disturbed patients. The exhibit shows that are demonstrated include (1) patients with various alcohol withdrawal syndromes, (2) disturbed psychotic patients, and (3) ... syndromes.

The Clinical Value of Frog and Toad Pregnancy Tests.

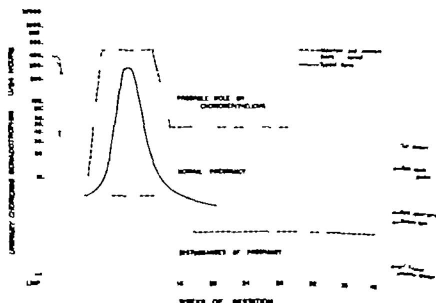
Edward H. H[illegible] and John McL. M[illegible], Yale University School of Medicine, New Haven

The exhibit consists of photographs, drawings, and posters that show the [illegible] requirements for the accurate hormonal diagnosis of pregnancy. The reasons for false positive and false negative reactions when obtained [illegible] frogs and [illegible] such as [illegible] with the aid of chorionic gonadotrophin [illegible]. A system of pregnancy testing that is accurate for the diagnosis of pregnancy and of value in the disturbances of pregnancy is also illustrated.

The use of male batrachians as test animals for the diagnosis of pregnancy has the advantage of speed simplicity and economy At the same time however, they have been noted to be less accurate than the A-Z mouse or Friedman tests These inaccuracies are largely due to the relative insensitivity of the batrachians and the seasonal variation in their sensitivity to chorionic gonadotrophin Non-specific false positive reactions are also a source of error but this is small except when using male *Rana pipiens* in the spring

The accuracy of the A Z mouse or Friedman tests can be approximated if a larger volume of urine is used to compensate for this insensitivity This required amount of urine is usually too large for direct injection and a concentration technique must be used A testing system can be maintained at any desired sensitivity if the seasonal variation in test animal sensitivity is known and the appropriate aliquot is concentrated This can be readily accomplished with the simple rapid adsorption-filtration technique used in our laboratory and previously described

There is some evidence that in the disturbances of pregnancy a pathologically low chorionic gonadotrophin titer is definitely related to poor prognosis and the use of quantitative estimations of chorionic gonadotrophins in these conditions may be clinically useful



CHORIONIC GONADOTROPHIN LEVELS IN NORMAL PPL. (
AND THE SENSITIVITY OF VARIOUS PREGNANCY TL

COMPARISON OF TYPICAL TEST

	R. pipie s	*B. americanus*
SPECIFICITY	f lse po tl	good
SENSITIVITY	f	good
END POINT	good	good
REACTION	4 h	4 hrs
ECONOMY	go d	good
AVAILABILITY	good	[illegible]

Version and Extraction.

FREDERICK H. FALLS and CHARLOTTE S. HOLT University of Illinois College of Medicine and Illinois State Department of Public Health, Chicago.

The exhibit consists of drawings, charts, and life-sized medical sculptures in full color in frontal section depicting in three dimensions the technique of external cephalic version, Braxton-Hicks version, and internal combined version. In addition, drawings and an x-ray demonstrate maternal and fetal pathology associated with these operations. Indications and contraindications and the selection of operation are discussed.

Transvaginal Pudendal Nerve Block.

PRESTON LEA WILDS and MILTON L. McCALL, Louisiana State University School of Medicine New Orleans.

This exhibit presents a new technique for pudendal nerve block. It replaces the conventional perineal injections by a single transvaginal injection directly into the vaginal mucosa and the sacrospinous ligament at the point where they overlie the pudendal nerve. A model illustrates the ease of the procedure. The results of 150 pudendal blocks with the new technique demonstrate its reliability and safety.

Use of Chlorpromazine in Gynecological Surgery

WILLIAM D. CHAMBLIN and JOHN CORBIT JR., Philadelphia.

The exhibit summarizes experience with chlorpromazine as an adjunct in gynecologic surgery. In a controlled study of hysterectomized patients, one half of the group received the drug postoperatively by intravenous drip in addition to other medication as needed. The chlorpromazine-treated patients demonstrated a sharp reduction in need for narcotics, postoperative intestinal distention was markedly reduced, no vomiting occurred, and recovery time appeared to be significantly shortened. The exhibit illustrates the technique, the findings, and the implications of the study and summarizes the investigators' subsequent experience with the drug.

Local Infiltration Versus Pudendal Block Anesthesia in Obstetrics and Gynecology

EDWARD W. KLINK and GORDON T. BURNS, Rockford Memorial Hospital, Medical Clinic of Rockford, Rockford, Ill.

The exhibit (1) reviews the significant anatomy of the perineum and pudendal nerve, (2) compares the technique and results obtained with both local infiltration and pudendal block anesthesia, presenting a method of using local infiltration to the perineum without causing edema and distortion of tissues and contrasting a "one shot" pudendal nerve block, and (3) summarizes the results of a three-year study of over 300 obstetric and gynecologic cases. Pelvic models are used for demonstration purposes.

Transcervical Resection in the Uterine Canal.

W. B. NORMENT and C. HENRY SIKES, Greensboro, N. C.

The exhibit shows resection of polyps and submucous fibroids of uterus and bladder resection through the cervical canal (principle is similar to prostatic resection only different type of instrument). Many hysterectomies may be avoided.

Phasemicroscopy in Office Cancer Screening.

M. EDWARD DAVIS and GEORGE L. WIED, University of Chicago the School of Medicine, Chicago.

The exhibit demonstrates the value of phasemicroscopic examinations of fresh cytological smears for prescreening of smears as office procedure and for special examinations in the cytology laboratory. A simple method is outlined showing how the gynecologist can eliminate a great majority of the so-called completely normal smears, thus leaving approximately 10% of the specimens for evaluation in cytology laboratories. The value of immediate smear studies in special cases, such as the examinations of saline washings of wounds after radical surgery for cancer, is demonstrated. Finally the value of phasemicroscopy in the study of the hormonal changes in vaginal cytology is presented.

Biodynamic Study of Uterotubal Insufflation: Differentiation Between Tubal and Uterine Oscillation.

JOHN STAVORSKI, CARL G. HARTMAN, I. C. RUBIN, and GEORGE D. RICHARDSON, Ortho Research Foundation, Raritan, N. J.

In this exhibit kymographic and electronic records show that the uterus almost certainly plays no part in causing the fluctuations. Certain purely mechanical features of the records are pointed out. Apparatus never before used in such studies are demonstrated, the sensitive glass capsule manometer for mechanical recording of pressure changes and strain gauges and recorders for electronic recordings.

Trichomonads and Trichomoniasis.

R. N. CHAPPLE and ALFRED B. KUPFERBERG, Ortho Research Foundation, Raritan, N. J.

The exhibit portrays the growth and morphology of Trichomonas vaginalis. It depicts the metabolic characteristics of trichomonads and relates methods and diagnosis to the clinical manifestations of the disease. This includes criteria for cure as opposed to asymptomatic clinical cure. Comparative data demonstrate the relative effectiveness of systemic and topical therapy.

Surgical Management of Carcinoma of the Cervix.

JOSEPH W. KELSO and JOSEPH W. FUNNELL, Oklahoma City.

The exhibit demonstrates the indications for surgical management of carcinoma of the cervix, from diagnosis to treatment, together with the all-over results of the patients managed for years or more. It also shows the results with cases which had carcinoma of the cervical stump as well as cases with carcinoma of the cervix complicated by pregnancy.

Therapeutic and Diagnostic Uses of Adrenal Corticoids in Gynecology

HERBERT SPENCER KUPPERMAN, JEANNE A. EPSTEIN, MYRA E. BLATT and LEE VOSBURGH, New York University College of Medicine, New York.

There is an ever-increasing demand for the use of corticoids in gynecology. The interrelationship between the pituitary, adrenal cortex, and ovary are presented. Aberrations of adrenal cortical function and the influence upon the pituitary-ovarian axis are described. The rationale for the use of the corticoids in abnormalities of menstruation, disturbances in ovulatory function, and certain manifestations of masculinization is presented, and the physiopathology noted in these processes is also described. The rationale for the use of the corticoids in the hypothyroid obesity syndrome is considered, and the comparative efficacy of hydrocortisone, cortisone and prednisone in therapy is analyzed.

Aids to Subnormal Vision.

David Volk, Western Reserve University School of Medicine, Cleveland.

The exhibit consists of group of telescopic and microscopic spectacle lenses of original design, some of which re inserted int spectacle frames. The lenses, which may be composed of either two or three components, are especially designed for compactness and at the same time designed to correct pherical and chromatic berrations and urvature of the field, distortion, and marginal astigmatism. Diagrams plaining the optics of the lenses are part of the exhibit.

SUBNORMAL VISION

REDUCED CENTRAL ACUITY DESPITE REFRACTIVE CORRECTION

COMPENSATED FOR BY OPTICAL DEVICES WHICH PRODUCE ENLARGED CLEAR RETINAL IMAGES

THESE INCLUDE

MICROSCOPIC LENSES

STRONG PLUS LENSES FOR NEAR

TELESCOPIC LENSES

FOR DISTANCE
FOR NEAR

ABERRATIONS

C̶r SPHERIC MICROSCOPIC LENSES

ALL INCREASE TOWARDS EDGE OF LENS

CURVATURE OF THE FIELD
DUE TO LATERAL OVERCORRECTION

MARGINAL ASTIGMATISM
DUE TO OBLIQUE INCIDENCE OF LIGHT RAYS

DISTORTION
TRANSVERSE FLAT FIELD APPEARS 'PINCUSHIONED
LONGITUDINAL FLAT FIELD APPEARS CONCAVE'

CHROMATIC ABERRATION
TRANSVERSE RAINBOW LIKE BLUR AT BORDERS

ABERRATIONS RESULT IN DISTORTED BLURRED LATERAL VISION LIMITING USABLE LENS TO SMALL CENTRAL AREA

MAGNI

OF

TR

...py in Office Cancer Screening.

...ARD DAVIS and GEORGE L. WIED, University of ...ago, the School of Medicine Chicago.

...demonstrate the value of phasemicroscopic examination ...ical smears for prescreening of smears as office procedure ... examinations in the cytology laboratory. A simple method ...ing how the gynecologist can eliminate ... great majority ... completely normal smears, thus leaving ... for evaluation in cytology laboratories. The value ... studies in special cases, such as the examination ... of wound ... after radical surgery for cancer, is demon... the value of phasemicroscopy in the study of the ... in vaginal cytology is presented.

...tudy of Uterotubal Insufflation: ... Between Tubal and Uterine Oscillation.

...VORSKI, CARL G. HARTMAN, L. C. RUBIN, and ...OR D. RICHARDSON Ortho Research Foundation, ...an, N. J.

...ymographic and electronic records show that the ... in causing the fluctuations. Certain ... records are pointed out. Apparatus ... demonstrated: the ... of pressure change and ... recordings.

TR... 4% FOR EACH ...

...lasis.

...D B. KUPPERBERG, Ortho Re... ...tan, N. J.

...d morphology of Trichomonas ... characteristics of trichomonads and ... manifestations of the disease ... asymptomatic, clinical ... effective ... of systemic and ...

HYPERBOLOID LENS

GRADUAL REDUCTION IN POWER FROM CENTER TO EDGE



ELIMINATES CURVATURE OF FIELD
ELIMINATES DISTORTION
ELIMINATES MARGINAL ASTIGMATISM
REDUCES CHROMATIC ABERRATION
ENLARGES THE FIELD OF VIEW
ARE THINNER AND LIGHTER
CAN BE MADE IN LARGER DIAMETERS THAN EQUIVALENT SPHERIC LENSES
CAN BE COMBINED WITH ADDITIONAL LENSES ...ENS SYSTEMS

...CATION

Aids to Subnorm... NSES

DAVID VOLK, ... cine, Cle...

...ION OF THE ...E EYEPIECE

The exhibit consists ... lenses of original d... frames. The lenses, ... components, are ... ... designed to ... urvature of the field ... ... the optics ...

SUBNOR...

...APPLIES TO TELESCOPES ...ECTION INCORPORATED

ABERRATIONS

OF TELESCOPIC LENSES

ALL INCREASE AS EDGE OF LENS IS APPROACHED

CURVATURE OF THE FIELD

POSITIVE LATERAL OVERCORRECTION
NEGATIVE LATERAL UNDERCORRECTION

DISTORTIONS

TRANSVERSE "PINCUSHIONING" AND "BARREL"
LONGITUDINAL "CONCAVING" AND "CONVEXING"

MOVEMENT OF THE FIELD

OPPOSITE TO DIRECTION OF HEAD MOVEMENT

TILTING OF THE FIELD

AROUND HORIZONTAL AND VERTICAL AXIS

CHROMATIC ABERRATION

TRANSVERSE RAINBOW-LIKE BLUR AT BORDERS

ABERRATIONS RESULT IN A BLURRED DISTORTED MOVING AND TILTING ENVIRONMENT MAKING GENERAL WEAR EXTREMELY DIFFICULT

CORRECTION OF ABERRATIONS

OF TELESCOPIC LENSES

PROPER LENS CURVATURES REDUCE OR ELIMINATE

CURVATURE OF THE FIELD
DISTORTION
MOVEMENT OF THE FIELD
TILTING OF THE FIELD

CROWN GLASS OBJECTIVE AND FLINT GLASS EYEPIECE

CORRECTS CHROMATIC ABERRATION FOR ALL DIRECTIONS OF GAZE WHEN CENTER OF ROTATION OF EYE LIES ON OPTIC AXIS OF TELESCOPE

HYPERBOLOID LENSES

CAN BE USED AS A READING CAP WHEN DISTANCE TELESCOPE IS USED FOR VERY NEAR WORK

SHOULD BE USED AS THE OBJECTIVE ON A TELESCOPIC LENS USED ONLY FOR VERY NEAR WORK

DESIRED QUALITIES

OF TELESCOPIC SPECTACLES

USEFUL MAGNIFICATION

WIDE CLEAR FIELD

35 DEGREES OR LARGER ...

DEEP CLEAR FIELD

PERMITTING ACCOMMODATION ... TO ACT OVER A LARGER RANGE ...

COMPACTNESS

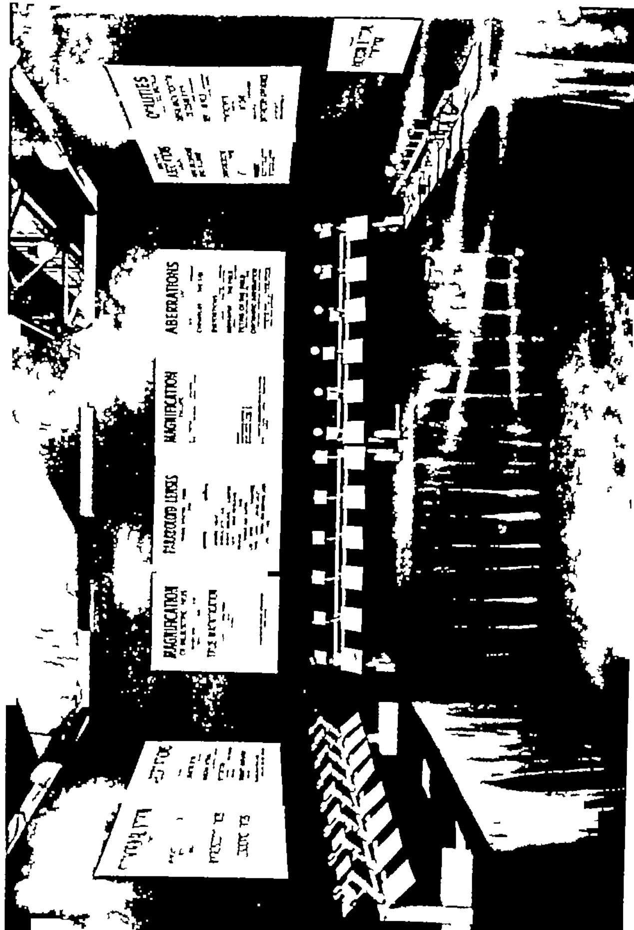
ENABLES WIDER AND DEEPER ...AR FIELD

LIGHT WEIGHT

ACHIEVED BY USING ... RELATIVELY LOW ... ...BER OF ...

SATISFACTORY APPEARANCE

THE DESIRED QUALITIES CAN BE ... ... IN MAGNIFICATIONS BETWEEN 1.1 AND 1.7 X


MAGNIFICATION
MAGNIFICATION
ABERRATIONS

Retinopathy in Diabetes: A Thirty-Year Clinical Survey

Robert C. Hardin, T. L. Johnston, Helen G. Kelley and H. B. Oehler, University Hospitals, Iowa City Iowa.

The exhibit is composed of photographs, charts, and graphs depicting the development and progression of retinopathy in a group of juvenile diabetic patients whose duration of disease ranges from 10 to 30 years. These patients have been under observation throughout their entire clinical course, and analysis of data shows that retinopathy is a preventable complication of diabetes and not an inevitable associated phenomenon.

The Newer Corticosteroids in Ophthalmology

John Harry King Jr., Washington Clinic, and Jack W Passmore, Ocular Research Unit, Walter Reed Army Medical Center, Washington, D C.

This exhibit shows the application of corticosteroid therapy in ocular disease, emphasizing the newer steroids prednisone and prednisolone. Combination and adjuvant medication is noted for certain conditions. General information is outlined on hormonal steroids in ophthalmology. The indications and contraindications are listed and are illustrated by enlarged color transparencies. The routes of administration and dosages are elaborated upon. The exhibit is intended to summarize the latest knowledge for the general practitioner and the specialist in applying corticosteroid treatment in ophthalmology.

Gonioscopy

Harold G. Scheie, William C. Frayer, Julia Lloyd, Marie Wilson, and Marie Kern, Hospital of the University of Pennsylvania, Philadelphia.

The gonioscopic appearance of the angle of the anterior chamber of normal and abnormal eyes is illustrated from artist's drawings. Normal variations are presented. The clinical value of gonioscopy in daily ophthalmologic practice is illustrated in the diagnosis of foreign bodies of the anterior chamber, tumors of the iris and ciliary body, classification and management of glaucoma including primary, congenital, and secondary types.

Cataracts in Vitamin-E-Deficient Turkey Embryos.

R. H. Riddon, University of Texas Medical Branch, Galveston, J. R. Couch and T. M. Ferguson, A&M College, College Station, Texas.

The pathological changes occurring in the eyes of turkey embryos are shown. The eggs were obtained from vitamin E-deficient hens. The primary lesion occurs in the lens. There is a complete liquefaction of the lens in many of the birds. In a few of the deficient embryos the cornea is edematous, and sometimes calcium deposits are present. The histological changes that precede the complete destruction of the lens are shown.

Survey of Pathogenesis and Treatment of Retinal Venous Occlusions.

Bertha A. Klien, University of Chicago, the School of Medicine, Chicago.

The exhibit presents transparencies of clinical and histopathological pictures of retinal venous occlusions of various types of pathogenesis and the suggested treatment, together with charts showing detailed description of typical cases and analysis of group of 80 patients.

Amblyopia.

Marie Williams, American Association of Orthoptic Technicians, Denver

Charts and photographs show early recognition and treatment of amblyopia.

Modern Therapy of Uveitis.

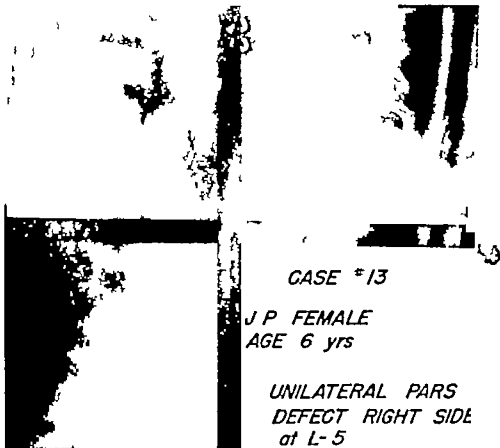
Dan M. Gordon, New York Hospital-Cornell Medical Center, New York.

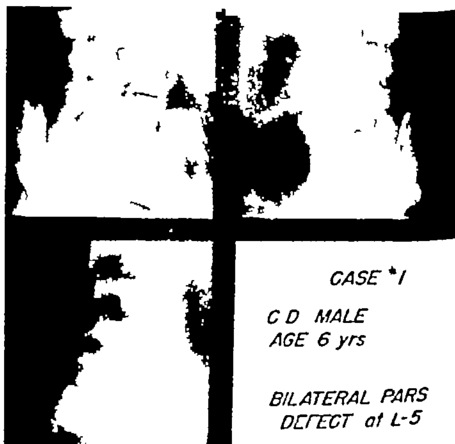
The exhibit shows the treatment of acute, recurrent, and chronic uveitis (both anterior and posterior). The long-term treatment of chronic uveitis has been a neglected subject in the literature. The management of resistant and complicating situations is stressed. This exhibit deals with hormonal-steroid therapy in the acute. Ambulatory treatment is stressed.

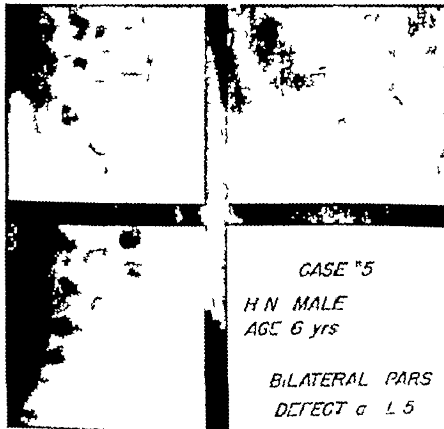
Herpetic Keratitis.

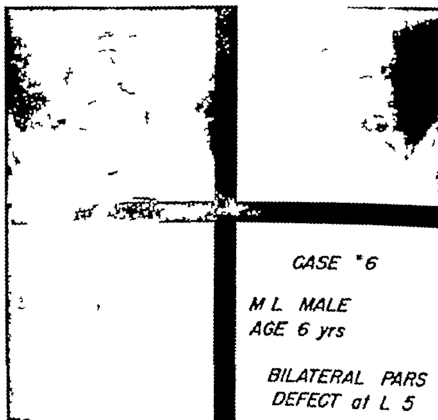
Samuel J. Kimura and Phillips Thygeson, University of California School of Medicine, San Francisco.

An analysis of herpetic keratitis and keratoconjunctivitis seen at the University of California Medical Center during the past few years is presented. Subjects for analysis include: (1) clinical manifestations, (2) trigger mechanisms, (3) clinical and laboratory diagnosis, (4) nature of the virus, (5) visual complications, (6) results of therapy with special reference to the unfavorable effect of topical steroid therapy and (7) current research.


CASE #13
J P FEMALE
AGE 6 yrs
UNILATERAL PARS
DEFECT RIGHT SIDE
at L-5


CASE #1
C D MALE
AGE 6 yrs
BILATERAL PARS
DEFECT at L-5


CASE #5
H N MALE
AGE 6 yrs
BILATERAL PARS
DEFECT a L 5


CASE #6
M L MALE
AGE 6 yrs
BILATERAL PARS
DEFECT at L 5



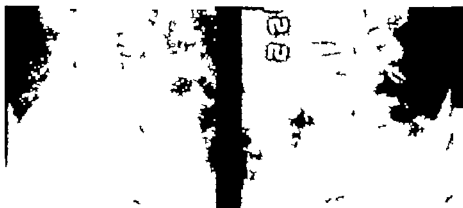


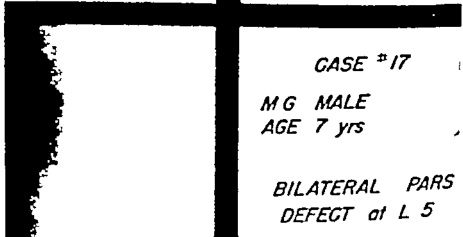


CASE # 15

J R MALE
AGE 6 yrs

BILATERAL PARS
DEFECT at L 5





A ROENTGEN SURVEY OF FIRST GRADE SCHOOL CHILDREN

Children Examined

	number	per cent
Males	225	56 25
Females	175	43 75
Total	400	100

Positive Children

	number	per cent	
Males	12	5 3	
Females	6	3 5	
Total	18		4 5%

PARENTAL INCIDENCE

Parents Examined

	number	per cent
Male	14 (1 deceased)	
Female	15	
Total	29	100

Positive Parents

	number	per cent	
Male	5	35 7	
Female	3	20	
Total	8		27 6%

SIBLING INCIDENCE

	number of families	total children	number of positive children	incidence
One parent positive	6	14	6	42 9%
Both parents positive	1	2	2	100 %
Neither parent positive	7	22	7	31.8%
Mother negative, father deceased	1	6	3	50 %
Total	15	44	18	40 9%

SUMMARY

1 The incidence of spondyloschisis and spondylolisthesis in this group of 400 six to seven year old children is comparable to that obtaining in the adult population.

2 The sibling incidence in this small group of fifteen families is eight times greater than average

3 The parental incidence in fifteen families is six times greater than average

4 One family consisting of mother, father and two children were all positive

5 One family having a 50 per cent sibling incidence cannot be classified because one parent was deceased at the time this survey was conducted

Oblique Rotational Osteotomy

T GORDON REYNOLDS and W A. SCHARFFENBERG JR., College of Medical Evangelists, Los Angeles.

This exhibit presents method of correcting, simultaneously combined angular and rotational deformities in bone by an oblique rotational osteotomy that favors postoperative union by permitting the cut surfaces to remain in apposition. The essential problem in this procedure is the accurate determination of the osteotomy slant with its relation to (1) the amount of rotational deformity (2) the amount of angulation, and (3) the direction of the apex of the angulation or plane in which angular deformity lies. Six osteoplast bones are used in an actual demonstration of the procedure. These models are actuated by push-button electric motors.

Compression Neuropathy of the Median Nerve in the Carpal Tunnel.

GEORGE S PHALEN and JAMES I KENDRICK, Cleveland Clinic, Cleveland.

This exhibit demonstrates the syndrome of spontaneous compression of the median nerve at the wrist by the use of Kodachrome photographs of dissected specimens, findings at operations, and presentation of clinical data on cases followed for period up to [illegible] years. The exhibit emphasizes the possible etiology of the condition—a chronic tenosynovitis involving the flexor synovia in the carpal tunnel. A simple diagnostic test (the wrist flexion sign) is stressed. Surgical treatment by section of the transverse carpal ligament is demonstrated. The use of local injections of hydrocortisone is also shown.

Arthrography of the Shoulder

WILLIAM R. SNEED JR., GRAHAM A. KERNWEIN, and BERTIL ROSEBERG, Rockford Memorial Hospital, Rockford, Ill.

Indications and technique are shown, together with examples of the [illegible] arthrogram, incomplete and complete rotator cuff ruptures, and [illegible] of the biceps, tendon, and capsule.

The Effect of Compression on the Growth of Epiphyseal Bone

L. J STRONGINO, Utica, N Y PAUL C. COLONNA and R. S. BRODEY Philadelphia, and GEORGE O FRENCH, San Luis Obispo Calif.

The investigation is carried out to determine the effect of compression on the rate of growth of long bones, the force required to cause arrest of bone growth, and determination of whether bone would return to normal growth after protracted period of arrest. Holstein calves were used as experimental animals, and the exhibit includes the actual bones used, [illegible] mechanical devices in situ. X-ray films taken in the course of the work, charts and graphs are presented.

Functional Fixation of Intracapsular Fractures of the Hip.

W. K. MASSIE, Lexington, Ky

The purpose of the exhibit is to demonstrate that femoral neck fractures will invariably heal if (1) adequate immobilization of the fragments is obtained and maintained and (2) infection does not occur. In addition it is believed that the sequelae of arthritis and avascular necrosis can be reduced if (1) full weight-bearing is postponed until bony union is complete and 2) the patient is reasonably cooperative in following postoperative precautions. Technical criteria include (1) proximal fragment placed in [illegible] (2) telescoping nail-plate inserted at 135 degrees with the shaft that is the weight-bearing axis of the femur and (3) inspection of the fragments at the time of surgery. Analysis is presented of 30 fractures fixed with [illegible] nail-plate [illegible] 14 fractures fixed with standard rigid nail for comparison.

Bone Tumors: Analysis of 2,276 Primary Neo- Bone Seen at the Mayo Clinic 1905-1955.

D. C. DAHLIN, R. K. GHORMLEY E. D [illegible] M. B. COVENTRY Mayo Clinic and Rochester Minn.

Accurate appraisal of tumors of bone demands clinical, roentgenologic, surgical, and pathological [illegible] classification must comprise entities with predictable [illegible] and should not have unnecessary subdivisions or [illegible] tions. The classification of bone tumors used in this [illegible] is based on histopathology and relates tumors to th[illegible] Since the type of treatment depends on the basic patholo[illegible] quate biopsy is imperative. This can be done readily [illegible] tumors contain soft tissue suitable for immediate diag[illegible] contains (1) graphic classification of all bone [illegible] with the relative frequency of occurrence and inciden[illegible] of each type (2) examples of each type, with its [illegible] roentgenologic signs, gross and microscopic features, treatment; and (3) summary of nonneoplastic lesion[illegible] must be considered in differential diagnosis.

Treatment of Hip Dislocation Associated with Fracture of Head or Neck of the Femur

GARRETT PIPKIN and DONALD K. PIPER, Kansas Ci[illegible]

Hip dislocation with fracture of the head or neck of [illegible] femur was originally rare injury of heavy industry It is now apparently on the increase due to modern traffic. The various types of the injury are classified according to their post-traumatic anatomy [illegible] providing rationale for treatment. Twenty-five hips in 24 cases with follow-ups of 6 months to 18 years are analyzed. This material is the pooled experience of correspondence club and the orthopedic surgeons of greater Kansas City. Thirty years ago (1926) Christopher [illegible] with regard to this injury: "The prognosis as to function is grave." Against this background the present series is contrasted. The significant lowering in mortality and marked increase in satisfactory results are credit to modern orthopedic surgery.

Heredity of Short Thumbs.

ROBERT M STECHER, Western Reserve University School of Medicine, Cleveland.

Short thumbs occur as definite, easily recognized but [illegible] sequential hereditary anomaly in about 0.5% of the population, affecting [illegible] major races, and are three times as common in women as in men. They have been recognized at birth, but they become more apparent up to maturity; they are associated perhaps as linked characteristics with other short bones in the hands and the feet having been seen with short third distal phalanges of the fingers, fourth and fifth metacarpal bones, first and fourth metatarsal bones, and first terminal phalanges of the toes. The proportionate length of the proximal phalanx of the thumb to the distal phalanx varies from 1.95 to 2.40 in short thumbs and 1.15 to 1.65 in normal thumbs in the adult. In short thumbs in children the proportion may be as low as 1.48 at age 6, increasing as age advances to 15 years to levels mentioned above. The epiphyseal line of the terminal phalanx disappears two years sooner in the short thumbs than the adult. The anomaly is inherited as recessive characteristic.

Treponema Pallidum Complement Fixation Test

HAROLD J. MAGNUSON and JOSEPH ... P... Health Servic... Department of Health, Edu... on and Welfare, Washington, D. C.

This exhibit d... bes the ...hemical fractionation ... Treponema pallidum ... serologically ... The use ... this antigen in complement-fixation tes... is illustrated ... evaluation of this test proced... the diagnosis of syphilis and in the differential diagnosis of suspe... d biological false posi... serolog... is presented.

PREPARA... ON OF ANTIGEN

IN VIVO CULTIVATION OF T. PALLIDU... IN RABBITS



Sacrifice by air embolism



Testes removed and minced



Minced testes in serum



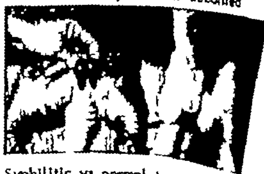
Elution of Treponemes



Supernatant decanted



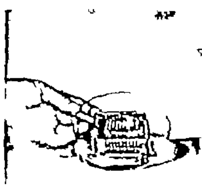
Injection of 1×10^{8} TP

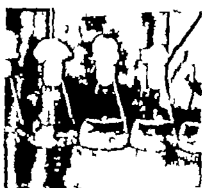


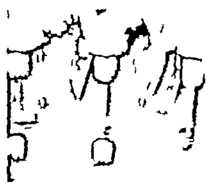
Syphilitic vs normal testes

PREPARATION OF ANTIGEN
ELUTION AND CONCENTRATION OF TREPONEMES

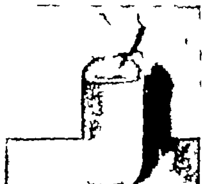

Testes dissected

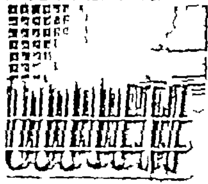

Testes sliced with razor

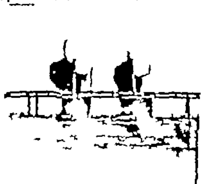

Testes in eluting fluid

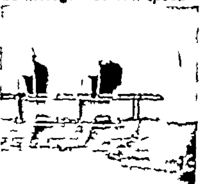

Flasks rotated 1 hour

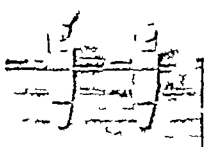

Supernatant decanted


Centrifuged at low speed

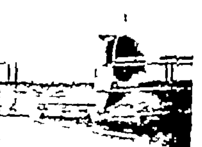

Centrifuged 20 000 G 1hr


Sediment saved


Sediment homogenized


Separation of red cells


Second homogenization


Combining extracted treponemes

EXTRACTION AND DISCARDING LIPIDS FROM TREPONEMES


Extract in Acetone – 1 hr

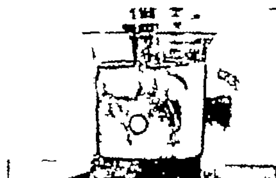

Sediment re-extracted

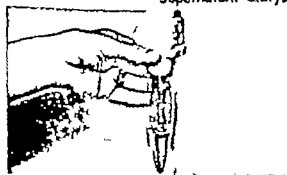

Dry powder after extraction

EXTRACTION OF SEROLOGICALLY ACTIVE SUBSTANCES


Powder in extracting solution


Suspension homogenized


Supernatant dialysed


Antigen after centrifugation


Antigen stored at 20

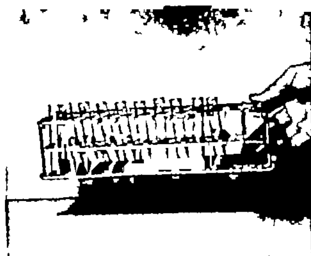
PERFORMANCE OF TPCF TEST

The TPCF test method represents a modification of one-fifth volume Kolmer complement-fixation test

REAGENTS

1 Saline (0 85% NaCl 0 01 % $Mg\ SO_4$)
2 Sheep Red Cell Suspension (2%)
3 Hemolysin
4 Complement
5 Inactivated Serum
6 Antigen

ASSEMBLING THE TEST



Hemolysin Titration
Dilution to contain 2 units



Complement Titration
Dilution to contain 1-1/2 units

QUALITATIVE TPCF TEST WITH SERUM

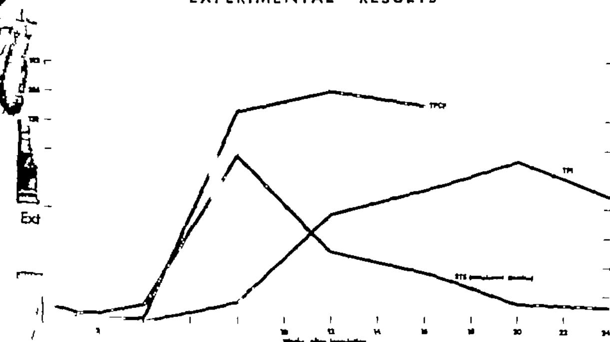
Reagent	tube 1 (test)	tube 2 (control)
Serum (heated $56^{\circ}C$) 1 - 5 dilution	0 2 ml	0 2 ml
Antigen (predetermined dilution)	0 1 ml	none
Saline	none	0 1 ml
Complement (1 5 units)	0 2 ml	0 2 ml

Incubate 16 - 18 hours at 4 - $8^{\circ}C$ plus 10 minutes $37^{\circ}C$ water bath

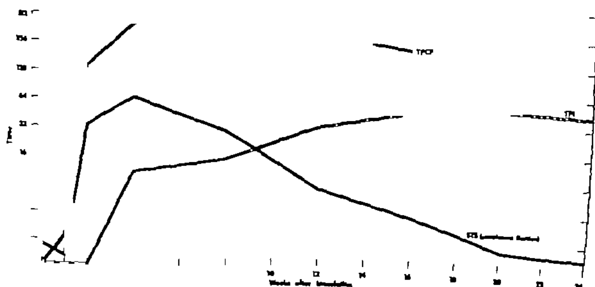
Hemolysin (2 units)	0 1 ml	0 1 ml
Sheep cells (2%)	0 1 ml	0 1 ml

Incubate water bath $37^{\circ}C$ for 20 - 30 minutes

Read tests against Reading Standards

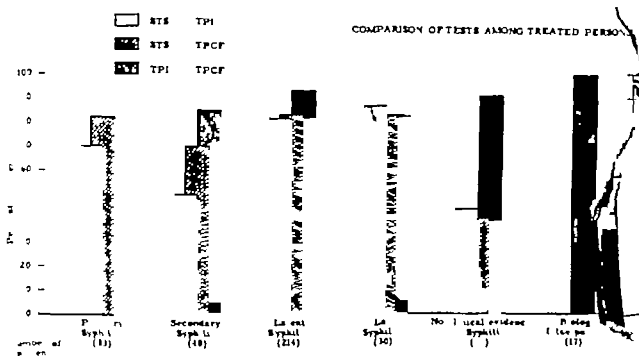


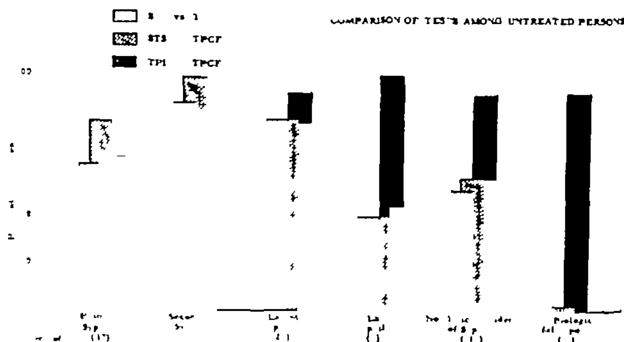
Appearance of Antibodies in Rabbits Inoculated with 10^2 Treponema pallidum



Appearance of Antibodies in Rabbits Inoculated with 10^8 Treponema pallidum

SIGNIFICANCE OF TEST





CONCLUSIONS

1 Reproducible antigens and highly reproducible test results are obtained with this technique

2 Test results in well documented cases indicate a specificity comparable to the T P I test in differentiating latent syphilis from B F P reactions

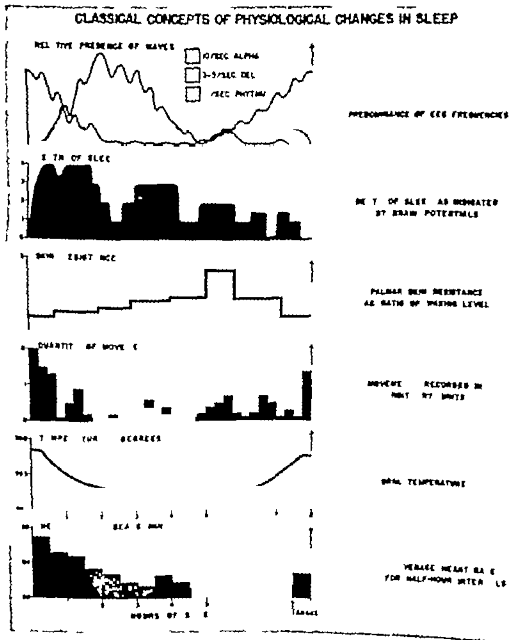
3 T P C F antibody differs from reagin and T P I antibody The full significance of these differences is not yet determined

4 Using this antigen laboratories equipped to perform well controlled complement fixation tests will be able to perform a treponemal test procedure

Physiological States in Sleep

CHANDLER McC. BROOKS, BRIAN F HOFFMAN, and E. E SUCKLING, State University of New York College of Medicine at New York City Brooklyn, N Y

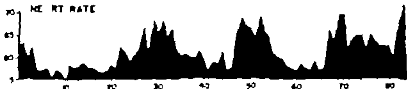
The exhibit presents a pictorial representation of physiological activity during sleep, consisting largely of records obtained from human subjects sleeping under controlled conditions and showing the effects of several environmental factors. Methods and procedures used in studies of sleep are illustrated. There will also be demonstration (conducted periodically) of the detection of variations in the depth of unconsciousness and concurrent changes in various physiological activities, using an anesthetized cat (in sound-shielded chamber) with multiple-channel direct recording instruments.



SINGLE NIGHT RECORD - ONE SUBJECT (TESTS RUN 2 MINUTES OUT OF 5)



SLEEP DEPTH ESTIMATED FROM EEG RECORDS

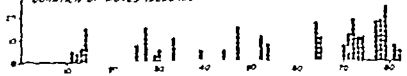


HEART RATE FROM EKG



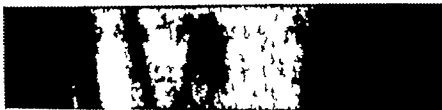


TEMPERATURE RECORDED FROM AXILLA AND GREAT TOE WITH SHIELDED THERMOCOUPLES FAILS TO REVEAL CYCLIC CHANGES DURING SLEEP





BODY MOVEMENT WAS RECORDED CONTINUOUSLY



STAGE 0

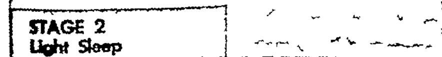
... of normal amplitude and frequency present ... intermittently in occipital and other leads.

STAGE 1
Drowsy



Bursts of alpha w... with slow waves of varying amplitude at ... frequency of 4-7 cps.

STAGE 2
Light Sleep



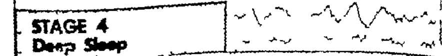
Absence of alpha waves. Waves at 4-6 cps. of low amplitude with some suggestion of spindles.

STAGE 3
Moderately Deep Sleep



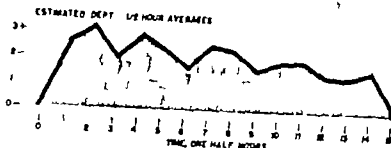
Some waves at 4-7 cps, with regular spindles at 13-16 cps. Some slower activity of low amplitude.

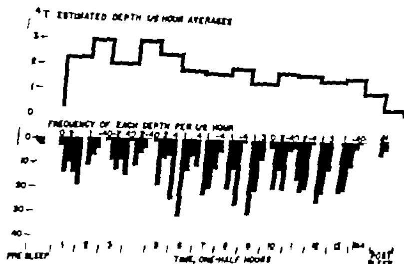
STAGE 4
Deep Sleep



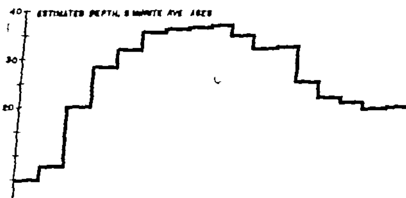
Predominant high amplitude slow waves at 1-2 cps, more evidence of spindles at 9-12 cps.

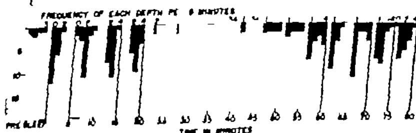
AVERAGE CURVE OF DEPTH O





ANALYSIS
OF SLEE
FREQUENC
DEPTH OCC
HALF H





DETAILED ANALYSIS OF F
80 MINUTES OF SAME CU
SHOWING FREQUENCY OF EA
DEPTH OF SLEEP
IN 5 MINUTE SAMPLES

MOTILITY AND DEPTH OF SLEEP

ESTIMATED DEPTH OF SLEEP

TIME IN ONE-HALF HOURS

ESTIMATED DEPTH OF SLEEP

NO. OF MOVES, 1/2 HOUR AVERAGES

DEPTH, 1/2 HOUR AVERAGES

ON 20 NIGHTS SUBJECT

NO. OF MOVES, 1/2 HOUR AVERAGE

TIME IN ONE HALF HOURS

AVERAGE NO. OF MOVES PER 1/2 HOUR

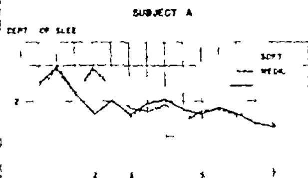
SUBJECT NO. 20 NIGHTS

RELATIONSHIP BETWEEN
AND DEPTH OF SLEEP
IN TERMS OF AVERAGE NUMBER
MOVES PER 1/2 HOUR
AGAINST AVERAGE
PER 1/2 HOUR

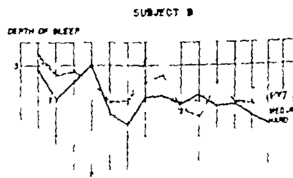
EFFECT OF ENVIRONMENT

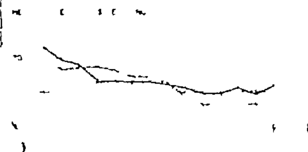
A SERIES OF TESTS OF THE EFFECTS ON A SLEEPER OF VARIOUS ENVIRONMENTAL CHANGES IS BEING UNDERTAKEN. SOME RESULTS FROM TESTS WHICH INVOLVED WIDE VARIATIONS IN HARDNESS OF THE SLEEPING SURFACE ARE SHOWN BELOW

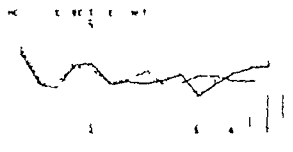
SUBJECT A

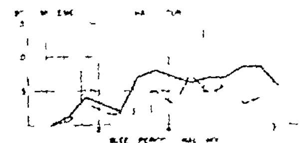


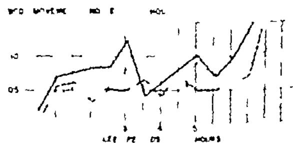
SUBJECT B











SUMMARY OF CONCLUSIONS

A. THE VERY HARD BED CAUSED THE SLEEPER TO MOVE MORE OFTEN BUT DID NOT GREATLY ALTER THE AVERAGE DEPTH OF SLEEP FOR THE NIGHT

B. AVERAGE HEART RATES WERE NOT SIGNIFICANTLY ALTERED DESPITE THE EXTREME DIFFERENCE OF SLEEPING SURFACES

Mucormycosis.

Roger D. Baker, Veterans Administration Hospital, and Duke University School of Medicine, Durham, N C.

The features of fungus disease that is apparently new one in the United States are explained. The first cases affecting the brain were reported in 1943 and affecting the lungs in 1948 While due to fungus, Rhizopus, usually harmless and common contaminant, there must be predisposing disease, such as diabetes or leukemia, in the patient before the fungus can infect. Knowledge of this mycosis should more generally be distributed, as its early recognition makes possible the saving of life. The development of periorbital swelling in patient with diabetes mellitus should suggest mucormycosis to the physician.

The Pathology of Virus Diseases in Newborn Infants.

Daniel Stowens, Armed Forces Institute of Pathology Washington, D C.

The morbid histological changes produced by viruses are illustrated, emphasis being placed upon the characteristic appearance of the lesions, their locations, and the etiologic agents. Brief summaries of the clinical manifestations of the diseases are presented. Because the diagnosis of these diseases at the present time rests almost entirely on recognition by the pathologist, and because of the questions relative to incidence and epidemics are still open, the necessity of awareness of these conditions is stressed.

The Thyroid Gland in Pregnancy

C. A. Hellwig, R. P Stoffer, Irene A. Koeneke, and V B. Chesky Hertzler Clinic and Hertzler Research Foundation, Halstead, Kan.

The exhibit illustrates the structural and functional changes of the thyroid during pregnancy The weights of thyroid glands during pregnancy in different regions and the microscopic characteristics in the thyroids of pregnant women are presented, as well as the basal metabolism, blood iodine, and demand for thyroid hormone during pregnancy The incidence of types of goiter during pregnancy in different regions is presented, together with the indications for surgical treatment of pregnancy goiter.

The Thoracic Duct in Malignant Disease.

Joseph M. Young, Veterans Administration Hospital, Memphis, Tenn.

This exhibit emphasizes two main points: the first is the frequency of involvement of the thoracic duct by malignant disease, and the second is the need for more biopsies of supraclavicular nodes in cases of intra-abdominal or intrathoracic disease.

A Better Understanding of Anion-Cation (Acid-Base) Balance.

Harry F Weisberg, Mount Sinai Medical Research Foundation and Chicago Medical School, Chicago.

The terminology of (acid-base) balance and the Henderson-Hasselbalch equation is confusing to most physicians. The exhibit defines these terms and illustrates the mechanics of anion-cation (acid-base) alterations utilizing the principle of primary level. The etiologies and mechanics of altered anion-cation (acid-base) balance are presented. A model balance will be available for the physician to be able to alter the bicarbonate and carbonic acid of the balance or both, illustrating how the acidosis or alkalosis occurs and what steps are necessary for the body to compensate for the pathological change.

Certification of Medical Technologists.

Lall G. Montgomery and Ruth Drummond, Registry of Medical Technologists of the American Society of Clinical Pathologists, Muncie, Ind.

The exhibit shows functions and activities of the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists in its work of setting standards for medical laboratory workers and certifying them. Informational literature, lists of approved schools of medical technology and statistics on salaries, places of employment of medical technologists, and various other elements pertaining to the general picture of the program of medical laboratory work are included.

The History of Goiter in Spain and Among Jews.

Isidor Greenwald, New York University College of Medicine, New York.

Charts illustrate the history of goiter in Spain and its rarity among Jews. Goiter is relatively recent disorder in most of Spain. Its prevalence is decreasing in many places. The rarity of goiter among Jews living in goitrous region was noted in 1776, 1827 and 1937 There is evidence that this relation existed through the Middle Ages and until after the French Revolution, except for one city in Spain in the 15th century A possible explanation is indicated.

Some Physiological Aspects of Aging.

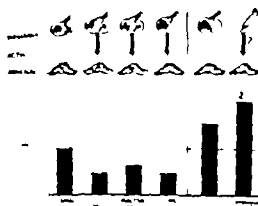
N. W Shock, National Heart Institute, Bethesda, Md., and Baltimore City Hospitals, Baltimore, Md.

This exhibit illustrates results from some of the physiological research on aging in man conducted in the Baltimore City Hospitals by the Section on Gerontology of the National Heart Institute. Utilizing data from studies on the acid-base balance of the blood, blood volume, blood sugar levels, renal function, cardiac output, and estimates of body water content and basal metabolism, the exhibit shows that, contrary to common belief, not all physiological functions diminish with age and that some of the age decrements that are apparent may be explained by progressive loss of functioning protoplasm.

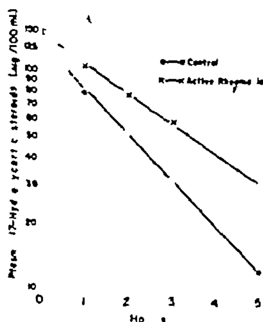
[illegible]

HORMONE PATTERNS IN RHEUMATIC FEVER

Blood levels of 17-Hydroxy-corticosteroids and ACTH in untreated rheumatic fever



Metabolism of hydrocortisone in rheumatic fever

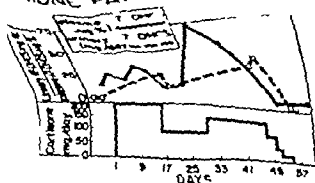


Except during early acute phase blood levels of 17 OHCS are low and ACTH high at all stages the steroid response to exogenous ACTH is adequate The rate of metabolism of 17 OHCS is decreased in patients with active rheumatic fever CONCLUSION PATIENTS WITH RHEUM FEVER HAVE RELATIVE ADRENAL INSUFFICIENCY AND IMPAIRED STEROID METABOLISM

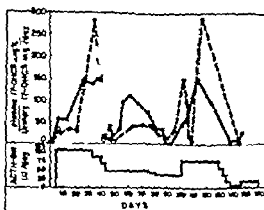
MONE THERAPY OF

EFFECTS OF

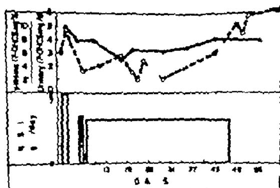
MONE PATTERN



CORTISONE



ACTH

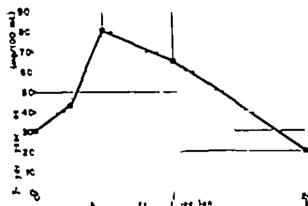


HIGH DOSAGE SALICYLATES

Therapy with cortisone or ACTH increases blood and urin steroid levels decreases blood ACTH levels Low levels of blood and urinary steroids persist throughout salicylate therapy (The anti rheumatic effect of salicylate is not dependent on elevated steroid levels) Hydrocortisone half-life returns to normal as active disease subsides

SALICYLATES AND THE PITUITARY—ADRENAL SYSTEM

Influence of Salicylate on Plasma Levels of 17-Hydroxycorticosteroids

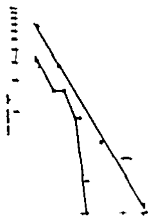


Serial plasma 17-OHCS levels in guinea pigs given 75 mg Na Salicylate I. P

Elevations of 17-OHCS levels do not occur in hypophysectomized or adrenalectomized animals

Markedly elevated plasma 17-OHCS levels were found in normal human subjects with salicylate intoxication. Similar elevations do not occur in rheumatics. Therapeutic salicylate doses given to normal human subjects result in significant fluctuations in 17-OHCS levels together with normal or decreased urinary excretions of steroids — suggesting increased production and an accelerated rate of corticosteroid metabolism

Influence of Salicylate on Rate of Steroid Metabolism



Salicylate increases the rate of removal of exogenous hydrocortisone from circulation. The hump in the curve suggests increased steroid production.

Impression: Salicylates have a dual effect

1. Stimulation of corticosteroid secretion
2. Acceleration of steroid metabolism (? utilization)

HORMONE THERAPY OF RHEUMATIC FEVER

Therapy Regimen Individualized

Initial dose

Size of dose determined by

1 Size of patient - minimum 1 IU ACTH or 3 mg cortisone /lb /day

2 Severity of illness

Duration of initial dose

1 Determined by response of patient

Tapering

When 1 No clinical evidence of activity

2 ESR normal at least one week

3 Serum mucoproteins less than 6 mg %

How, 1 Small decrements

2 Decrements at 2 3 day intervals

3 Each decrement only if no clinical or laboratory rebound

COMPARATIVE EFFECTS OF CORTICOTROPIN, CORTISONE, SALICYLATES, AND BED REST ALONE UPON VARIOUS ACUTE MANIFESTATIONS OF RHEUMATIC FEVER

	*ACTH**	*Cortisone*	*Salicylate*	*Bed Rest*
Joint involvement				
Mean days until improved	0 7	0 8	1 2	7 0
Mean days until disappeared	1 7	2 0	3 8	19 2
Mean days until temperature normal	1 8	1 0	2 0	—
Mean days until E.S.R. normal	18 6	11 9	43 4	48 2
S.E.M.	±1 97	±2 90	±5 26	±13 8

RESIDUAL CARDIAC MURMURS FOLLOWING THERAPY OF RHEUMATIC FEVER

Time of exam.	Hormone Rx		Nonhormone R	
	No pts examined	Per cent with murmurs	No pts. examined	Per cent with murmurs
Discharge	46	52	34	74
3 mo.	35	40	31	77
6 mo	34	26	27	67
1 yr	31	16	26	81
2 yr	25	8	20	75
3 yr	17	6	17	82

Includes all detectable murmurs

Diagnosis and Treatment of Moniliasis in Pediatrics

BOHDAN DODIAK, New York, and WALTER MITCHELL JR, Newark, N J

The exhibit is based on a clinical study of series of 70 children with oral and cutaneous moniliasis. Kodachromes of the etiologic agent and tables showing distribution of lesions, age at onset, and laboratory findings, as well as transparencies of typical skin and mucous membrane lesions, illustrate clinical and laboratory diagnosis. Vaginitis and other monilial lesions of mothers are shown as examples of sources of infection in infants. Pictures of patients before and after treatment with new antifungal antibiotic nystatin, together with statistical data, illustrate good therapeutic results. A dosage schedule for different forms of this drug is given.

Etiologic Agent

Candida (Monilia) albicans



Direct microscopic examination of scraping



Culture on Mycophil agar

... Miss Wanda Rak ... technical assistance

Diagnosis in 70 Cases

The

inical

Skin lesions		100%
Diaper area	64%	
Face, ears, neck	50%	
Trunk	49%	
Extremities	49%	
Mucous membrane lesions		41%
Oral thrush	36%	
Diarrhea	19%	
Respiratory distress		16%

Skin lesions



Mucous membrane lesions



Laboratory

	No. Positive No Performed	% Positive
Cultures of scrapings	70/70	100
Stool cultures	52/60	87
Urine cultures	4/5	*
Gastric washings	4/4	*
Blood cultures	1/2	*
Ear culture	1/1	

Performed only in selected cases

Honored

Diagnosis and Treatment of ... in Pediatrics

Bohdan Dorias ... Walter Mitchell ...
Newark, N. J.

The exhibit ... of a series of 70 children ... and ... agent and tables ... but ... age at ... and laboratory findings ... of ... and ... membrane lesion ... other monil... of infection ... for treatment ... new ... with ... illustrate good ther... of this drug is given

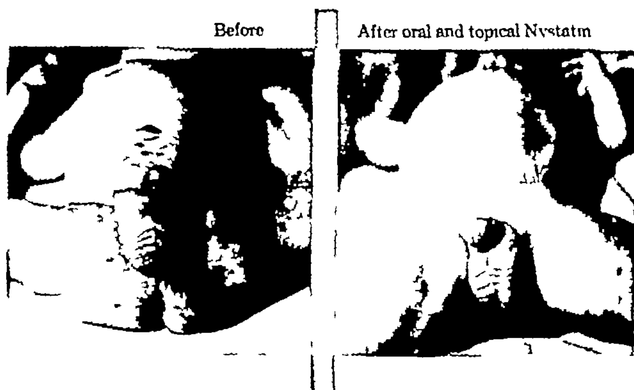
Etiologic Agent

Candida (Monilia) albicans

Direct microscopic examination of scraping

Culture on Mycophil agar

A ... Miss Wanda ...



Results of treatment with Nystatin

(Total number of patients t 48)

Re 47

24

23

The Use of an Oral Electrolyte–Carbohydrate Mixture.

Carl A. Gagliardi and Marjorie R. Stewart-Gagliardi, the Lynn Clinic and Hospital, Detroit.

An orally given electrolyte carbohydrate mixture is proposed. Its use in early dehydration are described. Case reports and pictorial representations are shown to illustrate its use.

Perinatal Mortality

George M Wheatley W P Shepard, and John McIver, Metropolitan Life Insurance Co., New York.

The exhibit presents facts that show the importance of perinatal mortality as an obstetric and pediatric problem. Contributing factors are outlined and suggestions made to reduce this major residual cause of infant mortality

Repair of Interatrial Septal Defects by the Closed Method (Atrio-Septo-Pexy).

Houck E. Bolton, Harry Goldberg, Daniel F Downing, and Demetrious P Lazarides, Bailey Thoracic Clinic, Philadelphia.

Transparencies, photographs, drawings, and three-dimensional models show various types of defects and methods of closure. The pathological variations, associated anomalies, and method (technical) of handling each are detailed step by step. Radiographic studies and physiological and clinical data before and after correction are detailed on charts.

Diagnosis and Treatment of Cystic Fibrosis of the Pancreas, Lungs, etc.

Gordon E. Gibbs, University of Nebraska College of Medicine, Omaha.

Clinical manifestations are listed (meconium ileus, bronchitis, chronic diarrhea, and heat exhaustion). Stool tests for fat and trypsin are shown by slides. A 14 F gastroduodenal tube is displayed in place on the model of baby The effects of different pancreatic stimulants (secretin, HCl and cream) on pancreatic flow in clinical tests are summarized. The correlation between the quantitative (Anson) trypsin assay and effect of undiluted juice on x-ray film is shown. Collection of sweat for diagnostic test is illustrated; normal and pathological values are summarized. Salivary chloride results are summarized. The current status of mucolytic agents (aerosol trypsin, desoxyribonuclease) and antibiotics (novobiocin, aerosol neomycin, and older antibiotics) is presented.

Pathology Associated with Jaundice in Infancy

Albert M. Hand and Edwin B Herring, Institute of Pathology Memphis, Tenn.

This exhibit includes examples of pathology found at autopsy of patients from the City of Memphis Hospitals and the LeBonheur Children's Hospital, Memphis, Tenn. Etiological conditions and pathogenesis are discussed.

The Operation of the Breast Milk Bank.

R. Robbins Kimball, Robert McGuigan, Ivan Rosenstern, Herbert Philipsborn, John Reichert Jr., and Joseph Rappaport Evanston, Ill.

The pediatric and nursing staffs of the Evanston Hospital and the Junior League Volunteers will demonstrate the operation of the breast milk bank in suburban community The staff pediatricians from the Evanston Hospital will describe the interest in breast feeding, how high percentage of breast feeding is achieved, its management, its advantages, and its difficulties. The nurses from the Evanston Hospital will describe the operation of the breast pump

Intestinal Obstruction in Newborn Infants.

Willis J Potts, W L. Riker, Arthur DeBoer, and Thomas G. Baffes, Children's Memorial Hospital, Chicago.

Intestinal obstruction in the newborn infant is due primarily to the following causes: atresia of the intestine, imperforate anus with and without fistulas, meconium ileus, malrotation of the intestine, and agenesis of the mesenteric plexus. The diagnosis and treatment of these conditions is illustrated and emphasized by charts, x-rays, transparencies, drawings, and moulages

Effective Treatment of a Growth Failure Syndrome in Children.

Louis S. Goldstein, Professional Hospital, Yonkers, N Y

Various causes for failure of children to gain weight at normal rates are analyzed. It is pointed out that in many instances such growth failures can be attributed to irritability and hyperexcitability with consequent development of faulty eating patterns. An effective method for correction of this vicious cycle is presented, together with the excellent clinical results that have been obtained from its use.

A Study of Blood Pressure in Children Four to Eighteen Years of Age.

A. W Graham, Chisholm, Minn.

Charts show blood pressure of children from nursery through high school. Examinations continued for period of 30 years, with total enrollment varying from 2,000 to 3,700 annually

Problem and Management of Constipation in Children.

Harry R Litchfield Brooklyn, N Y

A review of the etiology and pathogenesis of constipation in children (functional, psychogenic, metabolic, and organic) will be presented. Psychological and other complications often noted in the presence of constipation in children are discussed. Illustrative material of the pathophysiology in the various forms of constipation is likewise presented. The management of each major type of constipation in children, the rationale of the therapeutic modality and the pharmacology of the therapeutic modality and the pharmacology of the therapeutic agents is illustrated and outlined.

Cutaneous Tumors in Childhood.

Harold W Dargeon and Charlotte Tan, Memorial Center for Cancer and Allied Diseases, New York.

A variety of pigmented tumors occur during the juvenile age period, most of which are histologically benign. Their size, location and growth—evident and potential—determine their clinical importance. Examples of angioma, nevi, melanoma, xanthoma, neurofibroma, carcinoma, leukemia, and reticuloendotheliosis are shown in the exhibit and the therapy is described.

Experiences with Lente Insulin in Children.

Robert Lusky Alvah L. Newcomb, Matthew M. Steiner, and Howard S. Traisman, Children's Memorial Hospital, Chicago.

The exhibit of charts, photographs, and drawings show patients under management with lente insulins and time action of different insulins.

Meconium Ileus, A Medical and Surgical Challenge.

Harry C. Bishop John W Hope, and C. Everett Koop University of Pennsylvania School of Medicine and the Children's Hospital of Philadelphia, Philadelphia.

The exhibit presents the clinical and roentgen diagnosis of meconium ileus in the newborn infant. The pathology and various methods of surgical management are reviewed A new method of relieving the obstruction by partial resection, Roux-Y anastomosis, and single-barreled ileostomy for decompression and installation of liquefying pancreatic enzymes is included. The other problems that will later arise in patient with fibrocystic disease of the pancreas present challenge to successful medical management.

Treatment for Convulsive Disorders.

Ruth W Baldwin, Charles Van Buskirk, and Grange S. Coffin, University Hospital, Baltimore.

A proposed clinical classification adapted from W G Lennox is presented of convulsive disorders correlated with electroencephalographic findings and medicaments found useful of each group, also four illustrations showing results of newer medicaments as reflected in electroencephalographic studies. Mimeographed forms available for distribution include (1) structural formulas of medicaments commonly used in treatment of convulsive disorders, (2) comparative results of newer medicaments, (3) classification of seizures, and (4) drug dosages and toxicity

Certificate of Merit

What Price Ambulation A Study of the Indi ations and Contraindications for Paraplegic Ambulatio ..

EDWARD E. GORDON, Michael Reese Hospital, Chicago

Studies on oxygen consumption, oxygen de t, and bl od la tates indicate that for more severely involved parap ics (transv rse myelopathy poliomyelitis, cerebral palsy) routine ambulation im oses severe physical stress beyond their capacity Energy equirements s e such that in these subjects the demand is comparable to that of runn ng a 400-yd. dash in normal persons. Thus, at ambulation rate of 1 to 1 miles per hour these paraplegics reach their metabolic limit in four to six minutes. These findings have important implica ions regarding activity in preparing paraplegics for routine ambulation but, do not interdict ambulation purely as an exercise to maintain physiological balance.

Energy turnover for muscular activity is ultimat ly pported by two oxidat ve processes

1. Pay As-You-Go" Plan Aerobic process of O consumption per nute during exercise.
2. "Short Term Loan" Plan Anaerobic process of energy expend t re without payment of O_2 but the O debt so incurred is repaid immediately after exercise

Pay As-You-Go or Aerobic O With increasing intensity of acti ity O consumption per minute increases proportionately up to a certain limit. When the O cons min. in a given activity approaches the individual's limit, *he cannot inc ease his pace of work* See cases J T & S.B., 3-a.

"Short Term-Loan or Anaerobic O The consequent O debt accumulated with anaerobic work correspond to the intensity of the activity Its absolute limit depends on the individual's total active muscle mass and stat of training When the accumulated O debt in a given activity approaches the individual' ceilin *wo k mu t stop* See cases J T & S B. 3-b In severe exercise blood lactate concentration rises considerably

Method O consumption was found in 11 paraplegics disabled by poliomyelitis, transverse myelopathy or cerebral palsy during amb lation and in the recov ry period

Representative findings are presented for 3 subject ambulating at a slow speed, along with data derived from normal subjects *e f d th am t f ene gy*

1. Physical Work Speed and distances tra led during an equal time interval.

   Cardiovascular Work Pulse rates

3. Metabolic Work
   - A. Aerobic O cons. min.
   - B. O_2 Debt.
   - C. Blood lactate

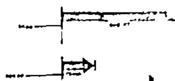
Data from Benedict & Murchhauser, Carnegie I W P 1915

CASE J.T.

1 PHYSICAL WORK

POLIO

NORMAL



2 CARDIOVASCULAR WORK

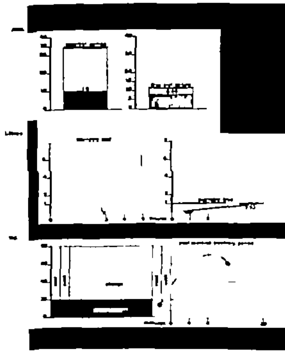


3 METABOLIC WORK

a AEROBIC O2 CONSUMPTION

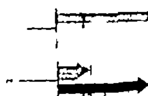
b OXYGEN DEBT

c BLOOD LACTATE



CASE J

1 PHYSICAL WORK



2 CARDIOVASCULAR WORK



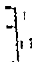
3 METABOL



a AEROBIC O2 CONSUMPTION

b OXYGEN DEBT

c BLOOD LACTATE

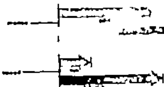


CASE F.P.

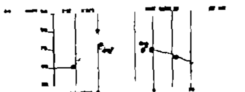
1 PHYSICAL WORK

CEREBRAL PALSY

NORMAL



2 CARDIOVASCULAR WORK

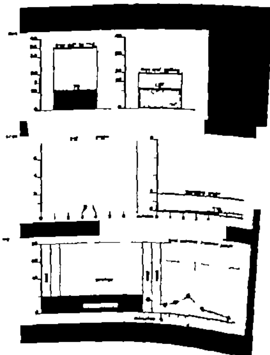


3 METABOLIC WORK

a AEROBIC O_2 CONSUMPTION

b OXYGEN DEBT

c BLOOD LACTATE



Conclusions

Physiological Findings

J.T. & S.B. Did Severe Physical Work. Crutch Ambulation Impractical

O_2 cons./min.—maximal
O_2 debt—reserve for only *one more minute* of ambulation; high blood lactate.
Pulse rate—reflected extreme cardiac work.

F.P. Did Mild Work. Crutch Ambulation Practical

O_2 cons./min.—far below ceiling
O_2 debt—minimal; no rise in lactate
Pulse rate—moderate rise

Severe metabolic activity correlated with loss of the L. B. extensors—J.T., S.B. and four others with similar findings.

Clinical Findings

Functional integrity of trunk extensor apparatus appears to be the main determinant of ambulation as a *routine practice* in paraplegia.

In transverse myelopathy the crucial level is T10-T12.
In poliomyelitis the crucial muscles are the back extensors.

Age is another determinant.

A 40-year old polio with good trunk extensors had findings similar to J.T.

Paraplegics with back extensor deficit should:

A. Use wheel-chair for routine locomotion.

B. Assume the upright position ½ hour daily for physiologic balance.

Post-exercise pulse rate is a good clinical index of the severity of stress imposed and may be used as a criterion for ambulation.

Exhibit designed by Patricia Blake

Honorable Mention

Preventive Measures in the Management of the Hemiplegic

Ray Piaskoski, Robert W Boyle, Edwin C Welsh, Paul A Dudenhoefer, Albert M Cohen and DeLore Williams, Marquette University School of Medicine Milwaukee.

This exhibit shows the methods used to maintain those gains made during the rehabilitation process. It consists of transparencies showing assistive devices braces and appliances, and home exercises given to the patient so that he remains as independent at home as he was able to be in the rehabilitation program.

The rehabilitation of a patient with hemiplegia begins the day he suffers his cerebro-vascular accident and does not end until he is as independent as possible in the personal social and vocational aspects of his life The primary purpose of this exhibit is to emphasize the relatively simple measures which can be employed by physicians anywhere in the hospital or home

The first phase while he is a bed patient is concerned with the prevention of contractures and deformities which will hinder his ability to use the extremity when motor return is sufficient for him to use it. During this time stress is laid on

1. Proper bed positioning
2. Splints
3. Passive range of motion

The second or wheelchair phase is still concerned with prevention of deformity but beginning independence is stressed. At this time are added

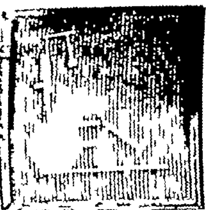
1. Active assistive and active exercises.
2. Self help in feeding and dressing using adapted equipment as needed.
3. Beginning vocational or other social planning

The Third phase the ambulatory is planned to prepare the patient for return to his home and community During this period the major emphasis is on

1. Standing balancing and ambulation activities using first parallel bars and progressing to eventual use of one cane or complete independence
2. Provision of permanent assistive devices such as drop foot brace or permanent arm support
3. Development of complete independence in the activities of daily living with adapted equipment if needed.
4. Vocational retraining if indicated.

The fourth phase represents the patient's return to the community and his resumption of his normal place in the family constellation. Here the emphasis is on

1. Continued home exercise program to maintain the gains he has made and to prevent deformity which might develop through faulty habits.
2. Participation in family and social activities.
3. Return to previous vocational status or development of new vocational or avocational interest



AIMS

Prevention of shoulder subluxation and tightness, and contractures in flexed arm

Prevention of flexion contractures from prolonged sitting

3. Prevention of edema as affected by

Prevention of postural deformities of kyphosis and scoliosis



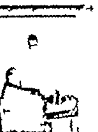


Overhead arm sling to prevent shoulder subluxation and tightness. Elbow motion.



Trough-like arm used to prevent shoulder subluxation and tightness in internal rotation.





Occupational therapy to give passive and active exercises to prevent limitation of motion.







Improved wheelchair by seat and back adjustable leg rest for prevention of knee flexion and control of edema.





High back board to prevent kyphosis and board with auxiliary support to prevent scoliosis.





Patient demonstrating difference in posture produced by use of back board.



Knee holder improved external rotation limited to 90° dorsiflexion.





Prevention of hip flexion contractures and limitation of motion by passive stretching range of motion exercises.







[illegible]





[illegible]

AIMS

[illegible]



[illegible]



[illegible]



[illegible]



[illegible]



[illegible]





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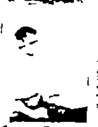


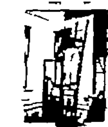
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AIMS

To prevent regression at home by maintaining an active exercise program, developing daily living skills, and encouraging social and vocational reactivation.




MILD RESIDUALS: Strengthening and coordination exercises are continued. The patient usually able to resume normal home, vocational and social activities.



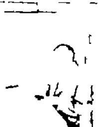




MODERATE RESIDUALS: Strengthening and range of motion exercises are continued. The patient usually able to do light work about the house, return to chiefly sedentary or sheltered workshops employment and resume [illegible] social activities.









SEVERE RESIDUALS: Passive, active assistive and ambulation exercises are continued. The patient usually [illegible] able to care for his own daily needs about the house with the help of assistive devices. Occasionally some type of home bound employment [illegible] possible. Attempts to resume some social activity are made.

Applications of Electromyography in Clinical Medicine.

A. A. Ro... Y. T. Oester, and J. J. Fudema, Stritch School of Medicine of Loyola University Chicago

... of panels illustrating (1) the general principles ... electromyography (2) common findings in electromyography ... of electromyography in general practice. In addition, ... with tape recorder will be used, and periodic ... on human subjects are planned.

Rehabilitation Follow-Up: A Medical Responsibility in Treating the Whole Man.

A. B. C. Knudson, F. J. Balram, and J. H. Van Schoick, Veterans Administration Washington, D. C.

The exhibit points out the responsibility of the physician involved in the acute phase of treatment providing for follow-up rehabilitation; indicating the scope of physical medicine and rehabilitation treatment, the rehabilitation follow-up services available in the community; and the need for knowledge of the ultimate results of the total rehabilitation process as ... means of insuring progress in the art and science of medicine.

The Multiphasic Approach in Rehabilitation.

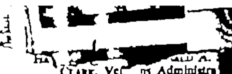
Sedgwick Mead, Vallejo, Calif. and O. L. Huddleston, Santa Monica, Calif.

The exhibit of photographs, drawings, charts, and suitable literature illustrates the thesis that patients need careful planning and preparation before admission, the multiple services of medical and psychologic evaluation and treatment as well as physical and occupational therapy, social service, recreation, and rehabilitation nursing. Following discharge the patient needs follow-up services to insure that goals reached ... not subsequently lost.

Disturbances of Space Perception in Hemiplegics and Its Relation to Gait Training.

Mieczyslaw Peszczynski and Jan H. Brutell, Highland View Hospital and Western Reserve University School of Medicine, Cleveland.

The exhibit illustrates research on space perception (visual and ...) in hemiplegics by means of graphs, models of apparatus, and photographs of patients. The photographs present typical motor behavior of hemiplegics reflecting disturbances of orientation in space. The research findings are graphically related to problems of gait training.



Clark, Vet... Administra...

The exhibit shows how venous thrombos... can be prevented by the avoidance of veno... during prolonged immobilizations.

Crossroads A Community Rehabilitat...

Dean W. Roberts and Jayne Show..., Crippled Children and Adu... Patton and K. R. Manning, ... for Crippled Children and Adu...

The exhibit presents demonstrations by the ... and selected patients of the Crossroads Reha... apolis, to typify comprehensive rehabilitation ... Children's Societies nationwide. Professional ... field of physical, occupational, and speech ... vocational counselors will be present at ... of therapeutic ... will be ...

Training Technique for Upper Extremity A...

Ben L... on, Rehabilitation Institute ... Compere, Chicago.

This exhibit ... different training techniques for the ... of upper ... amputees. It features demonstration of various stages of training and will also demonstrate activities for patients having different levels of amputation.

Safety: A Factor in the Functional Training of the Disa...

Morton Hoberman, Ernest F. Cicenia, and ... Dervitz, New York State Rehabilitation Hosp... York.

The exhibit demonstrates the factors of body mechanics ... be taught and utilized during functional training of the disabled ... as to minimize accidental injuries. The safety education applies ... therapist primarily since she must learn these for her own protection ... as well as that of the patient. A live demonstration will also be ... implement the safety factors shown by the photographs. The ... allow the audience to present problems that they have and ... be worked out by the demonstrators.





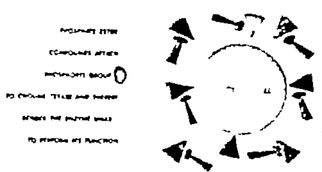
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... in the use ... in maximal ... f poisoning, and ... d by ... voided. A demonstration ... be ... concentrated activity is included



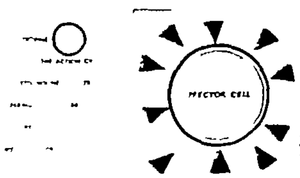

MECHANISM OF TOXIC ACTION OF PHOSPHATE ESTER INSECTICIDES



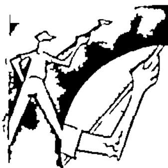


ROUTES OF EXPOSURE TO PHOSPHATE ESTER INSECTICIDES

MECHANISM OF PROTECTIVE ACTION OF ATROPINE



SKIN ABSORPTION

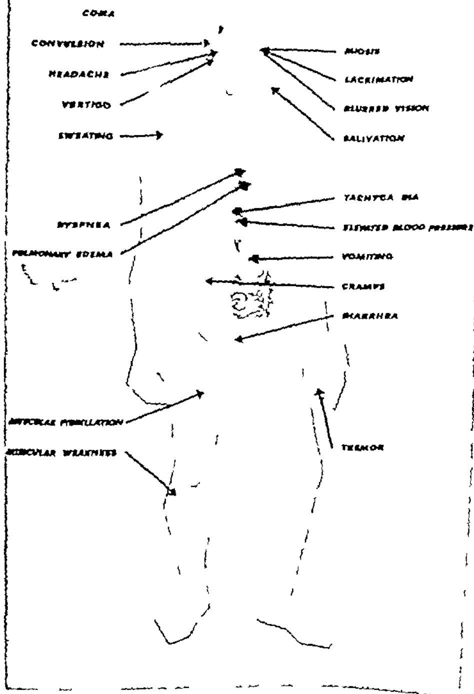


I N LATION



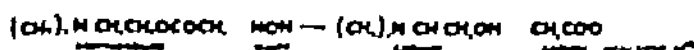
INC BE T I
GEST ON




COMA
CONVULSION
HEADACHE
VERTIGO
SWEATING
MIOSIS
LACRIMATION
BLURRED VISION
SALIVATION
DYSPNEA
PULMONARY EDEMA
ELEVATED BLOOD PRESSURE
VOMITING
CRAMPS
DIARRHEA
TREMOR

MEASUREMENT OF CHOLINESTERASE ACTIVITY

THE CHEMICAL REACTION CATALYZED BY
THE ENZYME IS



MOST METHODS EMPLOY
MEASUREMENT OF THE INCREASE IN
CONCENTRATION OF H^+

I. MANOMETRIC

II. ELECTROMETRIC

III. COLORIMETRIC

DIAGNOSTIC NOTES

IT PROBABLY IS PHOSPHATE ESTER POISONING IF

1. there is a definit history of posur 6 hours or less befor on et AND

2. there is clinical idence of diffus parasympathetic stimulation AND

3. ther I marked depre sion f plasma and RBC holin terase Ther ar usually no ymptoms or igns till choline teras le l eache bout 25% f normal or pre-e posure value

IT PROBABLY IS NOT PHOSHATE ESTER POISONING IF

1. the e posur was more than 12 hours befor onset

2. It is a febrile illness.

3. there are meningeal signs.

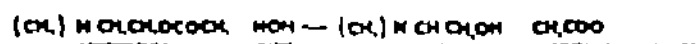
4. neithe plasma nor RBC cholinesterase le el is below 30%

5. illness persists longer than 24-48 hours

REMEMBER *the onset is abrupt, the course is short, and the clinical manifestations follow a definite pattern.*

MEASUREMENT OF CHOLINESTERASE ACTIVITY

THE CHEMICAL REACTION CATALYZED BY THE ENZYME IS



MOST METHODS EMPLOY MEASUREMENT OF THE IN
CONCENTRATI

SUGGESTED TREATMENT SCHEDULES

SEVERE POISONING

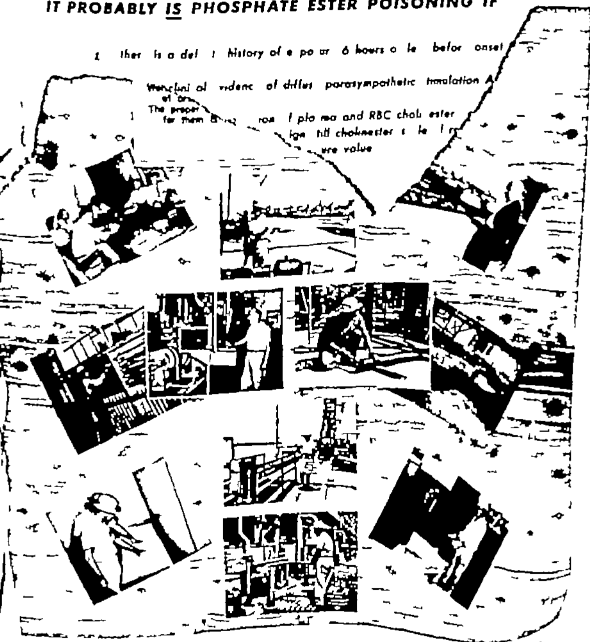
MILD POISONING

DIAGNOSTIC NOTES

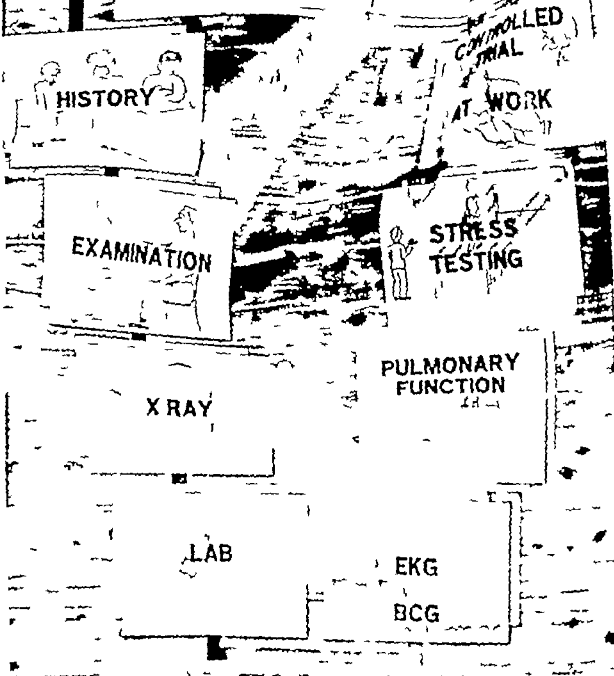
IT PROBABLY IS PHOSPHATE ESTER POISONING IF

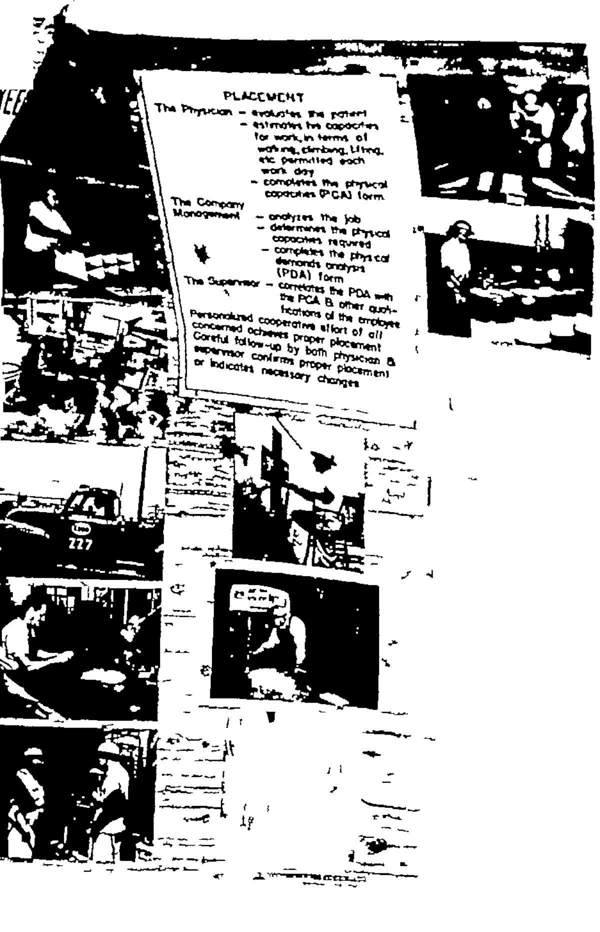
1. ther is a def i history of e po ur 6 hours o le befor onset

Wenchni of vid按 of difles parasympathetic timolation A
of ar
The proper
for them ros f plo ma and RBC choli ester
ige till cholnester s le
ure value



EVALUATION OF THE EMPLOYEE
WITH ARTERIOSCLEROTIC
HEART DISEASE


CONTROLLED
TRIAL
AT WORK
HISTORY
EXAMINATION
STRESS
TESTING
PULMONARY
FUNCTION
X RAY
LAB
EKG
BCG


PLACEMENT
The Physician – evaluates the patient
– estimates his capacities for work, in terms of walking, climbing, lifting, etc permitted each work day
– completes the physical capacities (PCA) form.
The Company Management – analyzes the job
– determines the physical capacities required
– completes the physical demands analysis (PDA) form
The Supervisor – correlates the PDA with the PCA & other qualifications of the employee
Personalized cooperative effort of all concerned achieves proper placement
Careful follow-up by both physician & supervisor confirms proper placement or indicates necessary changes
227



Dark v ssels represent normal venous sys em
Light ves ls represent partial filling of normal
veins after the dye injection.



Normal lateral azygos



Block of the azygos vein doe
lobe tumor with backflow of



Extradural lesion with block [illegible] the [illegible] us at the level of D 9 D 10 Confirmed by [illegible] surgery

Chordoma.

CHARLES M GREENWALD, THOMAS F MEANEY and C ROBERT HUGHES, Cleveland Clinic, Cleveland.

Chordomas are rar neoplasms of notochordal origin that may arise anywhere along the cerebrospinal axis. Examples of chordoma in the cranial, vertebral, and sacrococcygeal location are shown. Emphasis is given the vertebral lesion, which is least common. Roentgen findings are variable, and chordomas will often be mistaken for any number of the more common destructive lesions. A differential diagnosis is presented that varies with th level of the cerebrospinal axis involved.

CRANIAL CHORDOMAS





Chordoma with Middle Fossa Destruction







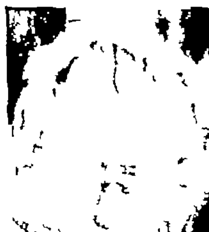
Advanced Chordoma with Orbital Exten-

CHORDOMAS ARE RARE NEOPLASMS OF NOTOCHO
OCCURING ALONG THE CEREBROSPINAL

Differential Diagnosis

35 45 /
POOMAS

10 or 20
50%



Craniopharyngeoma and Pituitary Carcinoma



Extension from Sphenoid and Nasopharynx



Acoustic Neuroma



Glomus Jugularis Tumor

VERTEBRAL CHORDOMAS



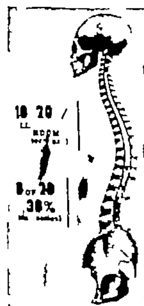






C_2 Chordoma with Extension by Larinogram

Differential Diagnosis




Infection Including Tuberculosis



Intraspinal Tumor (Ependymoma)



Metastatic Tumor




C_4 Chordoma with Pedicle Erosion

VERTEBRAL CHORDOMA IS MOST VARIABLE AND LEAST COMMON

Differential Diagnosis

X RAY FEATURES INCLUDE

L t d t cll with bcr p d cllo

As I d s ft il s n el i bl de r

L c l z d t b al ost 1 t ol em t t m lt pl conti g ous bodie

P se t d t t n t t p c

M dl l el



Primary Bone Tumor and Plasmocytoma



Epidural Granuloma



Lymphoma





Dorsal Chordoma Involving Multiple Bodies




L_3 Chordoma with Incomplete Spinal Block

SACROCOCCYGEAL CHORDOMAS




Caudal Chordoma with Huge Soft Tissue Mass

CHORDOMAS ARE OFTEN MISTAKEN FOR THE MORE COMMON DESTRUCTIVE LESIONS ILLUSTRATED

Midline Sacral Chordoma





Differential Diagnosis



Intraspinal T mor (ependymc a)



Extension From Pelvic Carcinoma and Metastases



Cho d osarcoma a d Gia t Cell T or



P esacral Growth Including Terato a

DIFFERENTIAL DIAGNOSIS WILL VARY WITH THE LEVEL OF THE LESION

Certificate of Appreciation

Selective Segmental Bronchography

André Mackay, Armand Trépanier, and Maurice R. Dupreene, Hospital Notre Dame, Montreal, Canada.

The usual technique of bronchography does not always succeed in injecting all the bronchial segments, even in normal patients. This is even more frequent when there exists, in lobe or segment, a lesion of any kind limiting partially or entirely the ventilation of these segments. It frequently happens that this segment or lobe is not sufficiently injected for diagnosis purposes. With selective bronchography only the desired segments are injected, in the order desired, and the opacification of the pathological segment is more complete and permits more precise diagnosis.

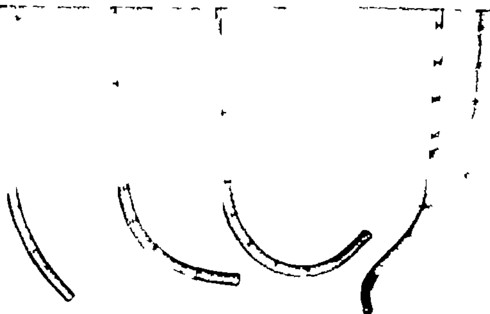
Report of 350 cases of Bronchograms

by

S lective Segmental Injection

with

M E T R A S   T U B E S



SMALL CURVED — Basal Segment

MEDIUM CURVED — Middl Lobe, Dors l segment

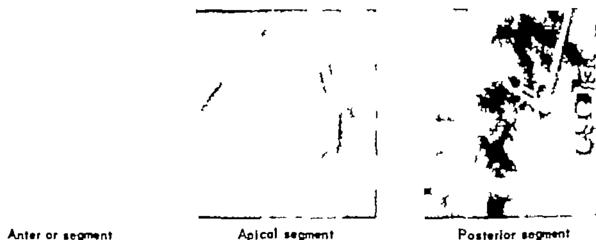
LARGE CURVED — Apical segment

DO

RIGHT LUNG

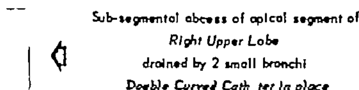
upper lobe

NORMAL



Anterior segment   Apical segment   Posterior segment

PATHOLOGY



Sub-segmental abcess of apical segment of
Right Upper Lobe
drained by 2 small bronchi
Double Curved Catheter In place

Bronchiectasis in anterior segment
Right Upper Lobe
Double Curved Catheter in place



LEFT LUNG

upper lobe

NORMAL



Apical posterior segment



Anterior segment

PATHOLOGY

Cancer of *Left Upper Lobe.*
A Large Carved Cath ter within the stenosis injects the narrowing and small abcess in the at lectatic *L ft Upper Lobe.*









Stenosing bronchogenic carcinoma in *Left Upper Lobe.*
A L rge Carved Catheter has been pushed through the stenosis and injects a normal Apical Posterior Segment.

RIGHT

lower lobe

NORMAL



Superior Segment



Posterior Basal Segment

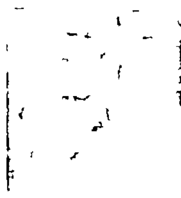


All Basal Segments

PATHOLOGY



Two abc sses n Super o Segment Medium Curved Cath ter n the segmental bronchus



Bronchiectas s in Superior Segment w th M dium Curved Catheter In place Nordenstrom techn c nject d all other s gments e cept th s on



Large bronchiectatic abcess In Anterior Basal Segment Small Curved Cath ter In place

LEFT LUNG

lower lobe

NORMAL



Post rior Segment



Anterior Segment

PATHOLOGY



Fusiform bronchiectasis of all Basal Segments. Note doubl contrast Small Curved Catheter i Lower Lobe Bronchu s.

Giant emphysem of Superior Segment crowding all ba al segments Injection of that segment would hav been unlik ly without catheter



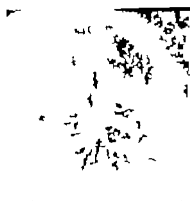
BLIND TECHNIC

Example of blind or postural technic.



Incomplete filling of the *Upper Lobes.*

SELECTIVE TECHNIC



same patient



Right lung
Bronchiectasis of upper and middle lobe

Left lung
Normal

A *COMPLETE BRONCHOGRAM* IS ESSENTIAL IN BRONCHIECTASIS.

TO BE SURE THAT EVERY SEGMENT IS ADEQUATELY INJECTED *FLUOROSCOPY AND SPOT FILMS* ARE NECESSARY

middle lobe



Middle Curved Catheter in Middle Lobe. Almost complete stenosis of 3 cm in length. Some *Aqueous Dionosil* in stenosis and some beyond it Bronchogenic Ca.

lingula



Doubl Curved Catheter in *Lingula.* Fusiform Bro chiectasis.

CONCLUSION

1. ***METRAS CATHETERS*** ARE USEFUL IN REACHING SELECTIVELY CERTAIN DISEASED SEGMENTS.

2. ***IN 350 CASES,*** WE ARE SATISFIED WITH ***AQUEOUS DIONOSIL*** AS THE IDEAL BRONCHOGRAPHIC MEDIUM, FOR THE TIME BEING

3. ***FLUOROSCOPY*** AND ***SPOT FILMS*** ARE JUST AS IMPORTANT IN THE STUDY OF THE BRONCHO-PULMONARY TREE AS THEY ARE IN THE STUDY OF THE GASTRO-INTESTINAL TRACT

4. WE BELIEVE THAT THE ***RADIOLOGIST ENDOSCOPIST*** TEAM IS ESSENTIAL FOR A GOOD AND SECURE BRONCHOGRAPHIC STUDY

Diagnosis of Perforated Abdominal Viscus on Supine Films.

Emanuel Mendelson, State University of New York College of Medicine, Brooklyn, N. Y.

[illegible] is presented on routine supine films of free intraperitoneal [illegible] perforated [illegible]. Air is demonstrated on the supine films in the lesser peritoneal sac and subhepatic, intrahepatic, pericecal, and periintestinal regions. Many cases had erect films that demonstrated free subdiaphragmatic air, and all were proved at operation. Only routine supine films, however, are demonstrated in this study. They are all diagnostic. This study is considered important, since in [illegible] definite percentage of the cases diagnosis of perforation was first suspected and made on supine study. Erect and decubitus films are still the procedures of [illegible] in demonstrating perforated hollow viscus.

A New Agent for Preparation of Patients for X-ray Examination of the Abdomen.

Milton Bernstein [illegible], Beth [illegible] Hospital, New York.

The [illegible] is [illegible] clearly defined [illegible] of the abdomen [illegible] [illegible] Various [illegible] and procedures used to accomplish [illegible] purpose [illegible]. The [illegible] obtained from use of [illegible] drug [illegible] are [illegible] and compared to results obtained [illegible].

Significance and Diagnosis of Colonic Polyps.

[illegible] S. Figiel, Steven J. Figiel, and Fred K. Wietersen, [illegible] Hospital, Detroit.

For three years the [illegible] have applied an intensive, combined [illegible] [illegible] detection of polypoid lesions of the colon. [illegible] results have been obtained [illegible] approach, [illegible] the use of [illegible] roentgenography, high kilovoltage [illegible] survey of [illegible] [illegible] [illegible] This is [illegible] very important [illegible] the prevention and [illegible] of neoplasms of the large [illegible] in the detection and removal of the polypoid lesion, the [illegible].

Combined Retroperitoneal Pneumography and Laminagraphy in the Diagnosis of Midline Abdominal Tumors.

[illegible] [illegible] and Ralph Myerson, Veterans Administration Hospital, Philadelphia.

The [illegible] the application of this [illegible] method to the diagnosis of the principal retroperitoneal midline tumors—abdominal Hodgkin's disease, lymphosarcoma, retroperitoneal sarcoma, metastasis from testicular seminoma [illegible] teratoma, and metastasis to the paraspinal tissue in renal tumors. Illustrative cases are included. A new technique of induction of pneumography [illegible] polyethylene tubing and fluoroscopy is outlined. The basic anatomy is reviewed.

Rotation Cobalt Teletherapy for Cancer: Television-Fluoroscopic Alignment Technique.

Henry L. Jaffe and Stanley H. Clark, Cedars of Lebanon Hospital and University of Southern California School of Medicine, Los Angeles.

The [illegible] presents [illegible] serial [illegible] of the procedures used for [illegible] [illegible] treating [illegible] patient [illegible] malignancy of the lung. The exhibit consists of [illegible] of the patient undergoing treatment and the equipment being used.

Contrast Radiography (Opaque Contrast Mediums).

Theodore F. Hilbish and Eugene Bronstein, the Clinical Center, National Institutes of Health, Bethesda, Md.

The exhibit demonstrates the wide range of radio-opaque contrast studies available to radiologists as diagnostic methods. Illustrations [illegible] [illegible] number of interesting pathological conditions discovered by these studies. Examples of the use of several of the more recently developed contrast agents are included.

Preoperative Roentgen Studies in Primary Lung Carcinoma.

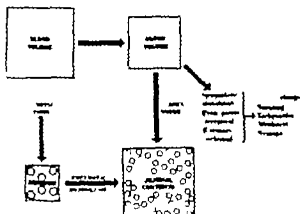
Lawrence Reynolds, William M. Tuttle, Harold J. Fulton, and George F. Boone, Harper Hospital, Detroit.

The proper preoperative roentgenologic study of patients with primary lung neoplasm consists of general and special diagnostic roentgen procedures. The minimum examination should include (1) chest fluoroscopy with particular attention to mediastinal shift, diaphragmatic movement, and lung aeration, (2) chest roentgenograms, with suitable projections and varying exposures necessary to demonstrate the [illegible] of the lesion, and (3) barium esophagogram to determine if displacement or invasion of the esophagus is present. Special roentgenologic studies of [illegible] [illegible] body section roentgenography and (2) angiocardiography. These various diagnostic techniques are illustrated by selected roentgenograms from a large series of cases of primary lung neoplasm.

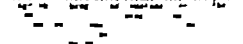
Treatment of Gastric Cancer

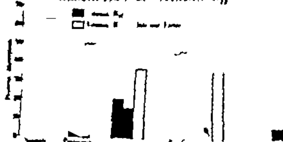
George T Pack, Gordon P McNeer, Richard Brasfield, Kathleen E. Roberts, Douglas A. Sunderland, Louis G Ortega, and Henry T Randall, Memorial Hospital, New York.

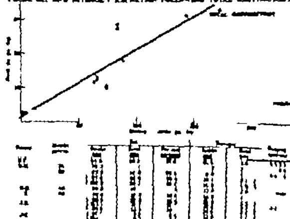
The exhibit covers three phases in the treatment of cancer of the stomach (1) pathological studies based on necropsy and investigation of specially cleared surgical specimens for lymph node distribution of metastasis, with certain conclusions regarding surgical technique; (2) metabolic changes in humans after total gastrectomy; and (3) end-results of treatment.











[illegible]

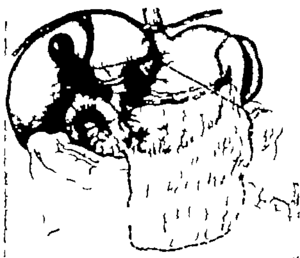
INCIDENCE OF FAILURE IN LOCAL CONTROL OF GASTRIC CANCER

Finding	Number	Percent
Grand total	92	100.0
Total failures in local control	74	80.5
Recurrence in gastric remnant	46	50.0
Recurrence [illegible] stump	9	9.8
Metastases in perigastric nodes and gastric bed	19	20.7
Distant metastases	14	15.2
No recurrence or metastases		4.3





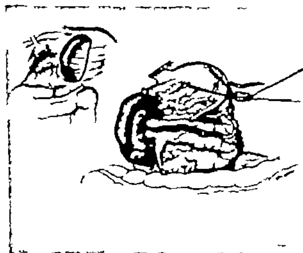




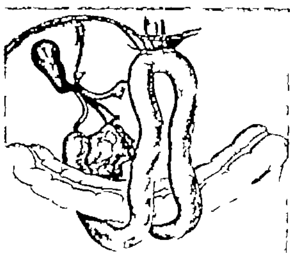
Radical ... gast... tomy ... employed f... cancer ... the pyl... ... trum. It inv... ... de... ... of the duodenum ... the stomach ... high ligati... ... section ... ... gastroj... ... colli... ... jejunostomy ... ... Hofmei...



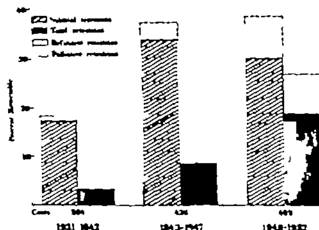
Extended ... gast... tomy ... employed f... ... the stomach ... the ... Al ... the ... tomy ... The ... the stomach ... half ... ... the ... gast... hepati...



The ... ... the ... ... the ... lon, but ... ... tion ... accomplished through ... ... this ... the ... ... the ... ... The ...



The ... has been ... ... tinal ... tinuity by ... ... end-to-side esophag... jejun... omy ... be ... An additional ... the ... may be employe... by ... down ...

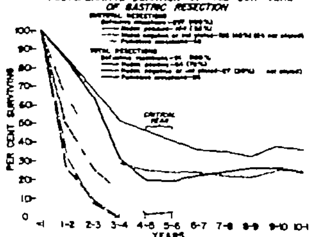




I l l the ume ll be pa ly hep l palli l er Ea ll l ne l , ne gx l t ltud ad imp ev te g l ing ha lted l me highe bl l y Ev t l gu t tomy l t nal y p lied l l l palli l

Lowe ing po tl mo t lity rat hould ll l gr t lly yo ss g G l surgical gxres- l ne particul ly mong the patient l the ide g g oup be possibly be he ts l nnal red po tl mo ll y ad for un hanging lvage rates

Subtot l g t tomy 19 8-1952 11 4%
T t l ga re ny 1948 1952 27 4%



An pps i l numbe l pati nt in fi yea urvival f ga tomy l case An inc ing numbe l ll y l med by st l g t tomy t be ne l hi pres ure

LONG TIME SURVIVAL WITHOUT RECURRENCE

Years	10-11	15-16	18-20	21 22
Subt t l		23	3	1
T t l	2			

CONCLUSIONS

The su g ca manageme l ga some based on ound ne ge he ymphati pr l as

2 I wae seem he the pe he he pe ss he l l pe led l hr ad he l ye may hope of perma ent er

3 Fi e-ye en may be ati ipa ed l 29 4% l opera l rvi l subtot l g tre tomy ad 10.5% f ope ervi t l ga tomy

Thoug eny ha mot l he ven ye l l lat ea ng number l peop he he erma ctive l lll he might herwise hav he de led he oppor uni

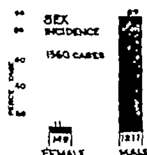
4 The l ifficul l dest bed by pa l nt et ctomy se he dumping synd ome Such ymp oms he me may be rel ev by igh prot in-low bohydra iet

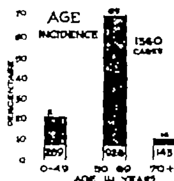
6. The dag os nd yma l som l g ctomy l as yet ompl y ade ad

Carcinoma of the Lung

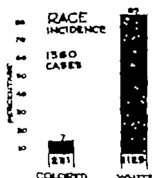
Alton Ochsner, Robert J. Schramel, John B. Blalock, Jack Harold Kitling, and Jack A. Haley, Tulane University School of Medicine and Ochsner Clinic, New Orleans.

This exhibit depicts the statistical evaluation of all cases of carcinoma of the lung seen on the Tulane services at the Charity Hospital of Louisiana and at the Ochsner Clinic. Operability and resectability rates through the years are presented. There is presented an evaluation of currently available diagnostic methods. An evaluation of the results of surgical treatment alone is presented as well as combined with nitrogen mustard and x-ray. The value of nonsurgical methods of treatment is discussed.



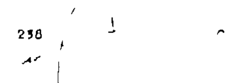


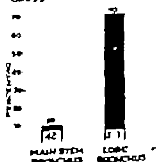
This is predominantly a disease of men between the ages of 50 and 70 years.



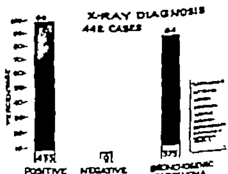
The pronounced difference in racial incidence is a reflection of the largely white patient admissions at the Ochsner Clinic. At Charity Hospital in New Orleans, where white and Negro patients are seen in equal numbers, there is nonetheless a definite difference in racial incidence; there were 1020 cases per 100,000 white male admissions to 597 per 100,000 Negro male admissions between 1948 and 1955.

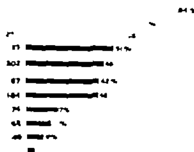
Clinical Fellow of the American Cancer Society

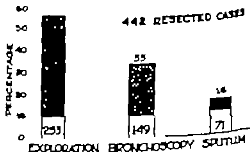








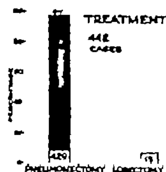


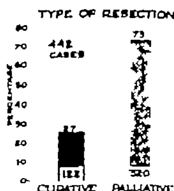


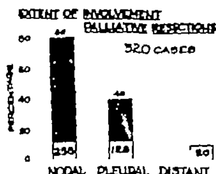


Only 24 patients n the group having resection were asymptomatic.

In only 16 per cent of patients having resection was the diagnosis made by cytologic e aminat on of the sputum Many of the patients in this series were seen before use of this diagnostic procedure Positive results were obtained in 35 per cent of the patients having resection in whom cytologic examination was done.

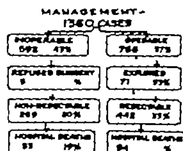


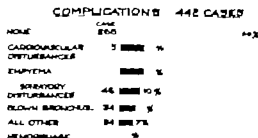


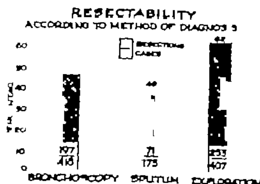


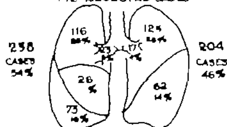
The classification of "curative" and "palliative" resections is a surgical pathologic one indicating, respectively confined to the lung, and metastatic or direct extension beyond the lung

The 20 patients with distant involvement were persons who had died in the postoperative period and were found at autopsy to have distant metastases. We do not operate on patients with known extension beyond the thorax

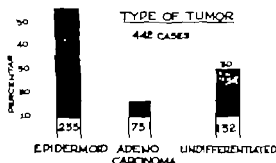


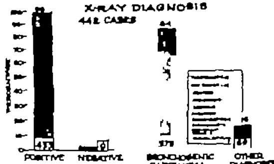


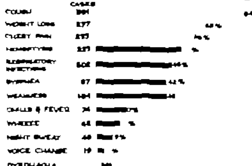


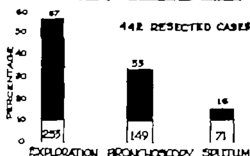












Only 24 patients in the group having resection were asymptomatic.

In only 16 per cent of patients having resection was the diagnosis made by cytologic examination of the sputum. Many of the patients in this series were seen before use of this diagnostic procedure. Positive results were obtained in 35 per cent of the patients having resection in whom cytologic examination was done.

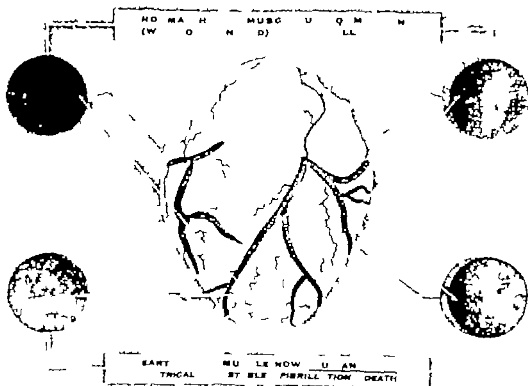
Operation for Coronary Artery Disease.

CLAUDE S. BECK, DAVID S LEIGHNINGER, and BERNARD L. BROFMAN, University Hospitals of Cleveland, Cleveland

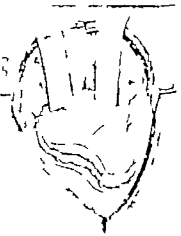
The exhibit shows physiological measurements of coronary flow under various conditions relating to surgic l operation together with Mautz-Gregg backflow after occlusion of descending artery to determine rate of increase. Operative and schematic drawings are shown, as well as the selection of patients for operation. Clinical results are shown, both early and late, including mortality P tients will be presented.

CORONARY ARTERY OCCLUSION

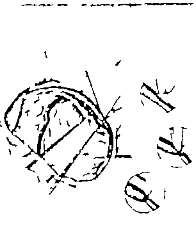
AFTER A CORONARY ARTERY IS OCCLUDED THE FATE OF THE PATIENT DEPENDS UPON THE AMOUNT OF BLOOD BEYOND THE OCCLUSION















OPERATION FOR INCREASING BLOOD SUPPLY BEYOND OCCLUSION













BACKFLOW MEASUREMENTS DEMONSTRATE THE INCREASE IN BLOOD SUPPLY BEYOND THE OCCLUSION PROVIDED BY OPERATION

There is no scientific evidence to indicate that medical measures add a single drop of blood to ischemic myocardium



History of 1 or more myocardial infarcts
(must wait 4 to 6 months after last attack).

Angina pectoris—preferably before
myocardial infarction occurs.

WHAT TYPE OF PATIENT SHOULD BE OPERATED?

Prophylactically for patients with bad
coronary family history.

Operation should be performed before
there is such extensive damage that
the heart dilates.

60 consecutive patients —mortality
operated upon to present

Operation reduces the impact of
a possible next occlusion and
(by experimental proof) saves life

CLINICAL EVALUATION OF THE BECK I OPERATION

Long term follow up on 137 patients
discharged six months to five years.
(Average follow-up: two years)

Dead—18 patients 13.1%
Expected mortality (Lindgren) 30.0%
CONCLUSION: SURGICAL TREATME

Present status of 100 pat
5 years past oper

PAIN: No pain
Less pain

WORK: Better a
with no
Better
with



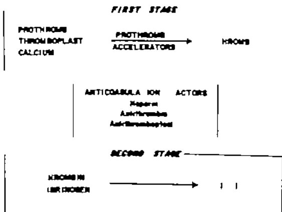
for the Routine Determination of Plasma Pro- Reference to the Control of Anticoagulant

vin, Phyllis M. Arscott and J. L. Koppel,
rian Hospital, Chicago.

ported Tame assay for the determination of plasma found to combine the virtues of both the one-stage techniques. In series of over 500 prothrombin deter normal plasmas and those obtained from patients individually on variety of anticoagulant drugs, the Tame assay showed ity close agreement with the two-stage method. Furthermore ame assay was found to yield identical results with five different omboplastin preparations. I addition to its reproducibility another important advantage of this technique is its relative technical simplicity. It would appear that, insofar as its reliability and clinical usefulness is concerned, the Tame assay is satisfactory and desirable substitute for one-stage and two-stage techniques.

According to present day concepts, blood coagulation is two stages. In the first stage, prothrombin, in the presence of thromboplastin, calcium and the accelerators factor V (Ac globulin) and factor VII (SPCA) is converted to thrombin. In the second stage, thrombin reacts with fibrinogen to produce the relatively insoluble fibrin. Present in varying concentrations are several anticoagulation factors such as heparin, antithrombin, and antithromboplastin — all of which influence the overall clotting mechanism.

The Mechanism of Blood Coagulation



Principle of One-Stage Prothrombin Time



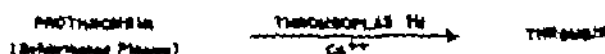
The One Stage Prothrombin Assay as developed by Quick and his co-workers (Am J Med Sc 190, 501, 1935) is used almost universally for the clinical assay of prothrombin and for the control of therapy with prothrombin depressant drugs. [illegible] ... An important advantage of the One Stage Prothrombin Time ... of the technique ...

The Two-Stage Prothrombin Assay as developed by Warner, Brinkhous and Smith (Am J Physiol 114, 667, 1936) and later modified by Ware and Seegers (Am J Clin Path 19, 471, 1949) is considered to provide a more accurate measure of prothrombin since it eliminates, for the most part, the variable rate of prothrombin conversion to thrombin. In this test the two phases, in which blood clots, are allowed to proceed in separate stages. Defibrinated plasma, diluted to varying concentrations depending on the amount of prothrombin present, is incubated with thromboplastin and calcium until no further thrombin appears. The thrombin thus formed is reacted with a standard amount of fibrinogen and the resulting clotting time is considered to be a function of the thrombin concentration. One unit of the latter is by definition derived from one unit of prothrombin. Because of its complicated techniques, this assay has not been accepted for general clinical use.

Principle of Two Stage Prothrombin Assay

(Warner, Brinkhous and Smith)

FIRST STAGE

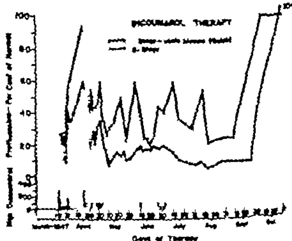


SECOND STAGE



Parallel use of the One Stage and Two Stage techniques in our laboratory over the past ten years has demonstrated that the Two Stage Procedure provides for more accurate control of anticoagulant therapy with prothrombin depressant drugs, thus diminishing the dual hazards of excessive bleeding and excessive clotting (Olwin, J.H. Surg Gyn and Obst 90, 423, 1950)

Comparative Levels of Prothrombin Using One Stage and Two Stage Methods



The TAMe Assay for thrombin as developed by Sherry and Troll (J Biol Chem 208, 95, 1954) and subsequently adapted by Glueck, Sherry and Troll (Proc Soc Exp Biol & Med 87, 846, 1955) to measure plasma prothrombin is similar in principle to the Two Stage technique in that it separates the two phases of the clotting mechanism. However instead of adding the thrombin formed during the first stage to fibrinogen, thrombin is allowed to react with tosyl arginine methyl ester (TAMe). This results in the splitting of the tosyl arginine ester linkage and the liberation of free carboxyl group. The amount of tosyl arginine thus formed is determined by titration with standard alkali. Under the conditions of the test it is a function of the thrombin and, therefore, prothrombin concentration.

Principle of TAMe Prothrombin Assay

(Glueck, Sherry and Troll)

FIRST STAGE

Prothrombin (Oxalated Plasma) → [illegible], Ca++ → Thrombin

SECOND STAGE

[illegible] + H_2O → Thrombin → CH_3OH + [illegible]

TOSYL ARGININE METHYL ESTER → TOSYL ARGININE

The data plotted on the adjacent graph show the results of prothrombin determinations by the TAMe and Two-Stage prothrombin procedures on patients individually maintained on the following anticoagulant drugs

(1) Sintrom
(2) Dicumarol
(3) Tromexan
(4) Marcoumar

SINTROM

DICOUMAROL

TROMEXAN

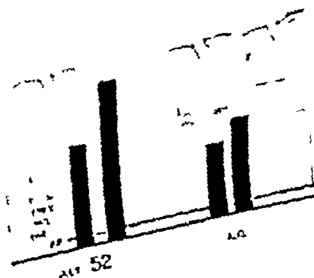
MARCOUMAR

Prothrombin

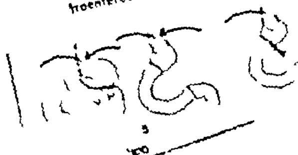
Days

Mg

The One Stage Prot[illegible] [illegible] and [illegible] (Am. [illegible] most universally for the [illegible] the control of [illegible] therapy with [illegible] [illegible] and then [illegible] [illegible] function of [illegible] to be [illegible] Moreover, variations in [illegible] accelerators as well as [illegible] the "One Stage Prothrombin [illegible] of the [illegible] in the marked [illegible]

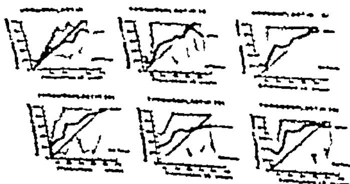


The Two-Stage Prothrombin Assay [illegible] Brinkhous, and Smith (Am. [illegible] Physiol. 114, modified by Ware and Seegers (Am. J. Clin. [illegible] considered to provide [illegible] more accurate [illegible] [illegible] conversion, for the most part, the prothrombin conversion to thrombin. In this [illegible] which blood [illegible] are allowed to proceed in Defibrinated plasma diluted to varying [illegible] ing on the amount of prothrombin present, [illegible] [illegible] and calcium [illegible] no further thrombin [illegible] than allowed to react with [illegible] [illegible] and the resulting clotting time is [illegible] of the thrombin concentration. One unit of [illegible] derived from one unit of prothrombin [illegible] complicated technique. This [illegible] has not been [illegible] [illegible] clinical use.



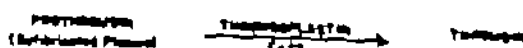
DEC 53

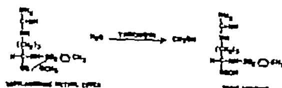
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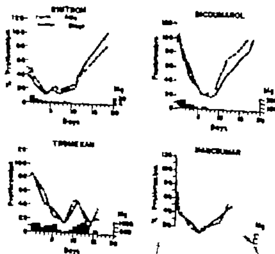
Principle of TAMe Prothrombin Assay





The data plotted on the adjacent graph show the results of prothrombin determinations by the TAMe and Two-Stage prothrombin procedures on patients individually maintained on the following anticoagulant drugs

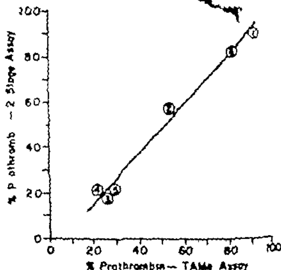
(1) Sintrom
(2) Dicoumarol
(3) Tromexan
(4) Marcoumar



[illegible]

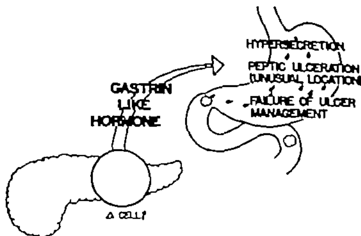
Each of the six points shown on the adjacent graph represents an average of twenty TAMe assays plotted against the average of the corresponding twenty Two-Stage determinations. For this comparison randomly selected patients on anticoagulant therapy were used at the following points of therapy

(1) Pre therapy
(2) 24 Hour post therapy
(3) 1st day at control level
(4) Second day at control level
(5) 24 Hour after cessation of therapy
(6) Last determination



Advantages of the TAMe Assay

1. Provides first and only chemical means for assaying plasma prothrombin concentration
2. Yields identical data with at least four different thromboplastin preparations which, in the One-Stage assay, often produce widely differing results
3. Utilizes only commercially available reagents which are readily prepared and easily maintained. In contrast most of the reagents required for the Two Stage assay have to be obtained from biological source material and require constant surveillance and standardization
4. Eliminates discrepancies in assay results occurring between different laboratories because of inconsistencies [illegible] methods
5. Is more easily mastered than the Two-Stage technique
6. Is amenable to further mechanical simplification through the use of specially designed automatic titration equipment



1 FULMINATING ULCER DIATHESIS (12 hr. gastric secretion 2 – 3 liters)

2. RAPIDLY PROGRESSIVE ULCERATION RECURRING DESPITE ADEQUATE THERAPY
MEDICAL
SURGICAL
RADIATION

3. PEPTIC ULCER AT UNUSUAL SITE

The Problem of the Nonadherent Surgical Dressing.

JAMES F CONNELL JR. WILLIAM PHILIP FRANK GILBERTSON and LOUIS M ROUSSELOT St. Vincents Hospital, New York.

A criteria for the evaluation of dressings is presented. The use of the four most common dressings is compared with new dressings in five major wound types. Thirty other new materials are displayed, with microscopic analysis of fi dressings mentioned bove.

A systematic survey of 125 new and old dressing materials was carried out in the Surgical Department of St Vincent's Hospital New York City during the years 1952 to 1955 Criteria for acceptability were devised from clinical requirements of five major wound categories encompassing all types of surgical lesions Controls were employed in each instance

The pictorial review demonstrates the use of the most promising material developed during this project and compares its properties with the four most commonly used dressing materials

The criteria employed were

(1) Non-adherence to wound surfaces
(2) Porosity of material to transudates and exudates
(3) Hypersensitivity reactions to the synthetic materials



BURN WOUNDS Extensive second and third degree burns of arm and thorax



XEROFORM GAUZE 5th day post-burn dressing so adherent that removal was impossible without serious injury to tissues



PERFORATED FILM DRESSING 5th day post-burn dressing adherent Note epithelium coming off with dressing



COTTON GAUZE Dressing applied 14th day post burn Maceration and adherence after 72 hours



PETROLATUM GAUZE 5th day post-burn. Note epithelium on dressing and weeping type wound



EMULSION-IMPREGNATED RAYON GAUZE Dressing painlessly removed 5th day post-burn No adherence maceration or puddling

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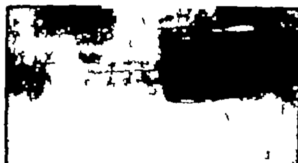
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OPERATIVE WOUNDS A
sutured operative wound
immediately after surgery



PETROLATUM GAUZE 4th day post-op Dressing non-adherent wound moist and slightly macerated



COTTON GAUZE 4th day post-op Dressing dry and adherent to sutures



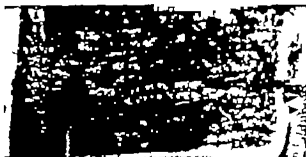
EMULSION-IMPREGNATED RAYON GAUZE 4th day post-op Dressing easily removed. No adherence or maceration



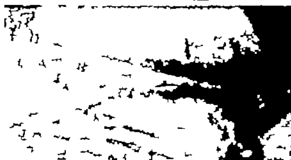
PERFORATED FILM DRESSING 4th day post-op Dressing non-adherent wound surface wet



XEROFORM GAUZE 4th day post-op Serum about sutures adherent to dressing Slight maceration.



DONOR SITES Donor area over thigh immediately after removal of skin graft 0 022' thick



EMULSION IMPREGNATED RAYON GAUZE 5th day post-op No adherence free drainage Wound surface dry Bleeding point under over-lapping gauze



PERFORATED FILM DRESSING 5th day post skin excision Wound macerated wet Adherence with poor drainage



COTTON GAUZE 5th day post op Firm adherence to wound



XEROFORM GAUZE 5th day post-op Maceration of wound even though porosity appears adequate Lower portion firmly adherent



XEROFORM GAUZE 5th day post-op Graft firmly attached to gauze on attempted removal.



GRAFT SITES Deep split thickness graft applied to excised ulcer of leg and sutured in place



PETROLATUM GAUZE
5th day post-op Adherent with slight maceration



COTTON GAUZE 5th day post-op Maceration of lower half of wound Adherence has resulted in tearing portions of skin from wound



PERFORATED FILM DRESSING
5th day post op Adherent to epithelium graft elevated from bed.



EMULSION-IMPREGNATED RAYON GAUZE 5th day post op Dressing freely removed Drainage adequate without puddling or maceration.



PETROLATUM GAUZE 5th day post-op Marked adherence Note epithelium on dressing

CONCLUSIONS

1) A system for the rapid and continuous evaluation of new surgical dressing material has been developed

2) The emulsion impregnated rayon dressing when properly employed may be utilized as a wound contact dressing for all types of wounds

3) The impregnated rayon dressing allows the re-utilization of donor sites in seven to eight days for skin grafts as well as providing a clean healed wound

4) This dressing allows purulent exudate to pass through into the absorbent layers preventing maceration of the wounds

5) It provides a clean operative wound on the fourth post operative day so that further dressings are not required

6) It is the best 2 burn dressing studied

7) It is useful over graft sites as granulations or the proliferating epithelium do not adhere to the dressing

8) There have been no indications of allergic manifestations to the dressing

Prosthetic Restorations in Head and Neck Surgery

MARTIN J. HEALY JR., BENJAMIN M. HOFFMAN, JAMES A. SUDSOY HAROLD H. NIEBEL, and MERLIN K. DUVAL, Veterans Administration Hospital, Bronx, N. Y

The exhibit shows methods of rehabilitation of tumor patients, combining the technique of the surgeon and the dentist in immediate implantation of an acrylic prosthesis prepared preoperatively postsurgical restoration of obturators, and guide planes for control of residual mandibular segment.

Carcinoma of Colon and Rectum.

RICHARD B. CATTELL, NEIL W SWINTON, and BENTLEY P COLCOCK, the Lahey Clinic, Boston.

A statistical study of the 901 patients with carcinoma of colon and rectum operated at the Lahey Clinic, 1945 to 1949 will be presented. Resectability rates, types of operations employed, mortality causes of death, and end-results obtained in this series are given. Significance of blood vessel and lymph node invasion will be emphasized.

Postoperative Thromboembolism.

HOWARD S. MADIGAN, HUGH H. HUSSEY and PHILIP A. CAULFIELD, Georgetown University Medical Center Washington, D. C.

The prevention, recognition, and management of venous thrombosis and pulmonary embolism are presented by means of illustrations, diagrams, and charts. Emphasis is placed on the predisposing causes and preventive measures, as well as the close relationship of these two entities.

Palliation of Esophageal Obstruction due to Carcinoma with a Permanent Intraluminal Tube.

S. A. MACKLER and G. BARD, Chicago Medical School, Cook County and Michael Reese hospitals, Chicago.

Resection of the esophagus for carcinoma, even for the sole purpose of palliation of obstruction, without the expectation of cure, is frequently impossible. This is particularly true of lesions of the upper and middle portions. A method is demonstrated whereby palliation of obstruction may be achieved by the introduction of permanently indwelling tube. The tube is inserted at the time of thoracic exploration when it is determined that resection of the esophagus is not feasible.

Ventricular Septal Defect: Diagnosis and Surgical Treatment.

H. B. BURCHELL, R. O. BRANDENBURG, H. J C. SWAN, D E. DONALD, A. J BRUWER, J W DUSHANE, H. G. HARSHBARGER, J E. EDWARDS, J W KIRKLIN, and E. H. WOOD, Mayo Clinic and Mayo Foundation, Rochester Minn.

It is important to recognize the varied clinical syndromes produced by ventricular septal defects now that surgical repair of these defects is being accomplished. These syndromes, and their relation to the size of the ventricular septal defect and the magnitude of pulmonary resistance, are illustrated and described. The pathological anatomic features of ventricular septal defect are demonstrated by models. Roentgenologic, electrocardiographic, and clinical features pertinent to the diagnosis of the malformation are depicted. Hemodynamic data are correlated with other observations in cases of ventricular septal defect. The technique for repair of ventricular septal defect by open cardiotomy while the patient is supported by mechanical pump-oxygenator is shown. The results of surgical repair support the belief that operation is indicated for patients with large left-to-right shunts across ventricular septal defects.

Obliterative Arterial Disease of the Lower Extremity—Clinical, Laboratory and Radiographic Correlations.

JOHN J CRANLEY and RAYMOND J KRAUSE, Good Samaritan and Cincinnati General hospitals, Cincinnati.

The exhibit presents method of grading the severity of obliterative arterial disease of the lower extremity by clinical examination alone. Laboratory data confirming the validity of the clinical method and demonstrating the effectiveness and limitations of therapeutic methods effecting modification in the foot will be included. Indications for arteriograms and direct arterial surgery will be suggested. In addition, an electronic digital plethysmograph and limb oscillometer will be demonstrated.

Hypothermia in Cardiovascular Surgery

MAX S. SADOVE, ORMAND C. JULIAN, and MYRON J LEVIN, Veterans Administration Hospital, Hines, Ill.

The exhibit shows the types of hypothermia, the indications for each, examples of each type, the description of the method of producing hypothermia (with the actual apparatus in operation as part of the exhibit) and the physiological changes and hazards in this technique.

Blood-Oxygenator

FRANK GOLLAN, JAMES T GRACE, and WALTER G. GOBBEL JR., Veterans Administration Hospital and Vanderbilt University Medical School, Nashville, Tenn.

This exhibit demonstrates small, inexpensive blood-oxygenator. It is used for the prevention of coronary shock, the production of hypothermia by blood cooling, and in the bypass of the heart and lungs for open cardiac surgery

Operative Cholangiography

C. ALLEN WALL and S. PATRICK PEARTREE, St. Louis University Hospitals, St. Louis.

The routine use of operative cholangiograms with biliary tract surgery is still subject of controversy among surgeons. Four hundred consecutive operative cholangiograms performed in the St. Louis University Hospitals have been analyzed in an effort to clarify this issue. Results of this study are presented.

Parenteral Alimentation.

WILLIAM E. ABBOTT HARVEY KRIEGER, and STANLEY LEVEY University Hospitals of Cleveland and Western Reserve University School of Medicine, Cleveland.

This exhibit depicts the metabolic deficits that occur in injured and ill patients. Deficits of nitrogen, calories, electrolytes, and water are dependent on the intake of the specific nutrient (especially calories and nitrogen) excessive losses, and internal shifts (particularly as regards to fluid and electrolytes). By means of data obtained from metabolic balance studies, the magnitude of these deficits is shown; the therapy that should be employed to correct them is also shown.

The Pathology and Surgery of Parotid Gland Neoplasms.

ROBERT S. TOTTEN, JOHN C. GAISFORD, and DWIGHT C. HANNA, Presbyterian Hospital, Pittsburgh.

The theme of this exhibit is that salivary gland neoplasms may be divided into three groups on the basis of their histological picture and clinical behavior Group 1 includes those tumors that are benign but have distinct tendency to recur Group 2 includes those tumors that are of low-grade malignancy Group 3 includes those that are highly malignant.

The Surgical Management of Regional Enteritis.

HERBERT R. HAWTHORNE, ALFRED S. FROBESE and PAUL NEMIR JR., Graduate Hospital, University of Pennsylvania School of Medicine, Philadelphia.

The clinical features of regional enteritis are presented. Examples of characteristic radiographic patterns observed in diagnosis are shown. A detailed description of the surgical pathology of this entity is elucidated with color transparencies representing the variety of lesions that were encountered. The indications for operation and the selection of the operative procedure are discussed, emphasizing the results in careful follow-ups from 1 to 25 years after surgery

Controlled Respiration in Surgery and Resuscitation.

ARCHER S. GORDON, CHARLES W FRYE, and HIRAM T LANGSTON, University of Illinois College of Medicine and Chicago State Tuberculosis Sanitarium, Chicago.

The exhibit features the ideal pressure breathing curve for surgery and resuscitation. The physiological factors concerning the ventilatory and circulatory dynamics are analyzed, and variations for use in open chest and closed chest cases are detailed. Fundamental reasons for each portion of the pressure profile are presented on the basis of detailed animal and human studies. A time-cycled, pressure-controlled, mechanical unit for production of this ideal breathing curve is demonstrated.

The Multiple Injury Patient

ROBERT H. KENNEDY LESTER BLUM, BENJAMIN A. PAYSON, and BEN F BRYER, Beekman Downtown Hospital, New York.

This is presentation of the problems involved in the care of the patient who has received multiple injuries. The treatment of shock, transportation of the patient to and within the hospital, the selection of diagnostic facilities, and the organization of surgical team for proper care are all considered. The importance of having team captain who organizes the treatment and supervises the activities of each of the specialists is emphasized.

Anemia Following Gastrectomy

H. J McCORKLE, DWIGHT H MURRAY JR., DEAN L. MAWDSLEY and HAROLD A. HARPER, University of California Medical School, San Francisco.

The exhibit presents experimental and clinical studies on the causes and treatment of anemia following partial and complete gastrectomy. This includes observations on the absorption of iron and Vitamin B_{12} as well as radioactive iron and Co^{60}-labeled vitamin B_{12}. The effect experimentally produced anemias on the absorption of iron is demonstrated. The application of this information to the prevention and treatment of anemia in gastrectomized patients is included.

Variations of Intestinal Peristalsis: A Correlation of Clinical, X-ray and Pathological Findings.

LEROY H. STAHLGREN, LORENZO E. SYLVESTER, and L. KRAEER FERGUSON, Woman's Medical College Hospital, Graduate Hospital, University of Pennsylvania, and Philadelphia General Hospital, Philadelphia.

The exhibit is designed as teaching aid to assist physicians to recognize and understand the variations in peristaltic sounds. The need for such teaching device arose because of the difficulty in assembling on each occasion sufficient clinical material for teaching purposes. It is felt that after listening to the record physicians will be better equipped to evaluate these important clinical findings. The pre-operative x-rays and colored transparency of the obstructing lesions are demonstrated synchronously with variations in intestinal peristalsis as recorded from patients exhibiting these findings. In this manner, an excellent correlation is obtained between clinical findings, x-rays and the pathologic lesion.

The Radio Corporation of America assisted in the project.

Tumors of the Hand.

JOSEPH L. POSCH, ROBERT D LARSEN, KEN[illegible] and WILLIAM O. MINTURN, City of [illegible] Hospital and Wayne University Colle[illegible] Detroit.

This exhibit consists of description of the various [illegible] are encountered in the hand. Premalignant, malignant, and [illegible] tumors are discussed. A description of the common tumors is pre[illegible] In addition, the characteristic features of the more unusual [illegible] are also discussed. Symptoms, diagnosis, and treatment are summarized.

Techniques in Abdominal Surgery

JOHN L. MADDEN, WILLIAM J McCANN, and JOHN M. LORE JR., St. Clare's Hospital, New York.

This exhibit consists of series of illustrations drawn from observations during the actual operations. The illustrations depict in minute detail the complete surgical technique in the performance of the following operations: (1) infradiaphragmatic resection of the vagus nerves and antecolic gastroenterostomy; (2) radical right hemicolectomy; (3) radical left hemicolectomy (4) total gastrectomy partial pancreatectomy and splenectomy (5) one-stage ileostomy and colectomy; (6) splenectomy; (7) inguinal herniorrhaphy (8) ligation of the inferior vena cava; and (9) end-to-side portacaval shunt.

Adrenocortical Tumors and Hyperplasia: Diagnosis and Treatment.

JAMES D. HARDY University of Mississippi Medical Center Jackson, Miss.

The exhibit consists of transparencies and charts depicting diagnosis (including steroid analyses) specimens, and total management of series of patients with either adrenocortical tumor or hyperplasia. A feminizing syndrome in man, the adrenogenital syndrome, and Cushing's syndrome are all portrayed including both sexes, children and adults, cortical hyperplasia, and both benign and malignant tumors. Hormonal therapy operative approaches, newer concepts, and broad principles of management are presented.

Streptokinase Intramuscularly in the Treatment of Infection and Edema.

JOSEPH M. MILLER, JOHN A. SOMMONTE, and MILTON GINSBERG, Veterans Administration Hospital, Fort Howard, Md., and FRANK B. ABLONDI, Lederle Laboratories, Pearl River N Y

A large number of patients with infection and edema have been treated by the administration of the antibacterial drugs and the intramuscular injection of streptokinase with excellent results. The exhibit reviews this work. The apparent mechanism of action of streptokinase and the results of experimental investigation in rabbits are presented together with results of treatment of eight patients, selected because they had various conditions. The observations on the use of the drug, the dosage, and the precautions concerning use are included.

rosthetic Restorations in Head
Martin J. Healy Jr., Br
Sudbo Harold H.
Veterans Administr

The exhibit shows metho
using the technique of
implantation of an acryl
applied restoration of
mandibular

Carcinoma of Co
Richard B.
Color

A statistic
section of
Research
of the
of life

Certificate of Merit

Bladder Substitutes: An Experimental Study in Dogs.

ALBERT E. GOLDSTEIN, B. S. ABESHOUSE, CANER YILDIRAN, MILTON GOLDFARB, and HANNAH SILBERSTEIN, Hoffberger Urological Research Laboratory, Sinai Hospital and University of Maryland School of Medicine, Baltimore

Various experimental procedures on dogs have been carried out to substitute the urinary bladder. The ileum, the inverted ileum, the sigmoid, and homograft bladders have been used to replace the urinary bladder. Some of the procedures have been performed previously while others are original with the authors. Postoperative specimens of dogs, and photographs are displayed.



PURPOSE OF THE EXHIBIT

Our research in bladder substitutes dates back to 1947 when Rubin and the senior exhibitor (A E Goldstein) produced an artificial bladder from a piece of sigmoid in a one-stage procedure Since that time we have been quite interested in other bladder substitutes

This exhibit is the result of the experimental work of the past nine years at the Hoffberger Urological Research Laboratory at Sinai Hospital Of Baltimore Inc

Our purpose in this exhibit was to demonstrate drawings of procedures roentograms of the urinary tract at varying periods of time during the experimentation gross specimens as a result of the experiments roentograms and specimens of the urinary tract at the time a dog was sacrificed for study and roentograms and specimens of the urinary tract including the substitute bladder at the time a dog was autopsied

We demonstrated total bladder substitutes which is a new concept This necessitated storing and freezing bladder tissue When stored the tissue was placed in Ringer's Solution with an antibiotic at 0° C for one week or more or the tissue was stored in deep freeze at -20° C for the same period of time The tissue remained more viable when the deep freeze was not employed

We described concisely some of the studies complications and results and arrived at certain conclusions

Partial And Total Substitute

Bladders In Dogs

Organs Employed	No
1 Sigmoid Colon	12
2 Ileum & Reversed Ileum	12
3 Ileo-Cecum	2
4 Partial & Total Bladder Autografts	13
5 Bladder Homografts	10
Total	49

Dog Studies

1 Pre P O & P M Pyelographic Studies

2 Electrolyte Imbalances

3 Nitrogenous Blood Studies

4 Sacrificed & Autopsied Specimens

1

2

3

4

SIGMOID SUBSTITUTE BLADDER







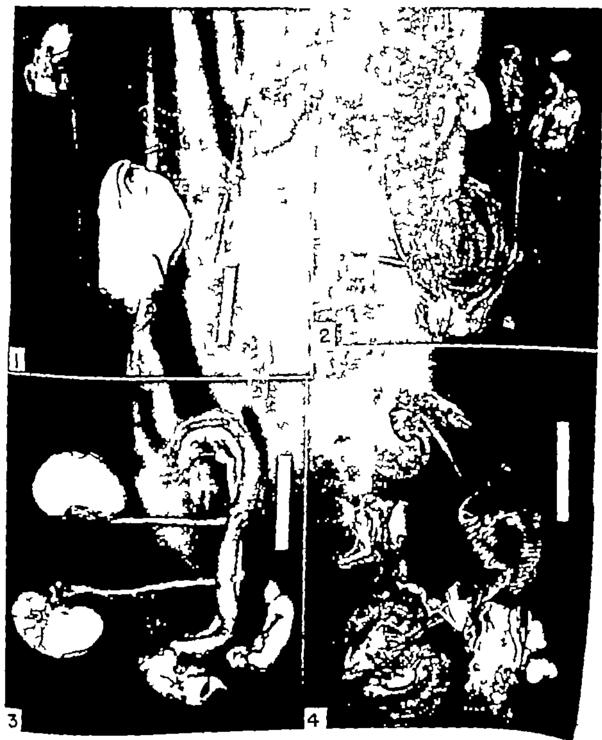


1 SIGMOID BLADDER -- CYSTOGRAM

2 SIGMOID BLADDER -- P M SPECIMEN -- 30 DAYS P O

3 SIGMOID BLADDER -- RETRO PYELOG -- 8 MONTHS P O

4 SIGMOID BLADDER - SPECIMEN -- 5 2/3 YEARS P O



1 TOTAL ILEUM BLADDER TO URETHRA NOT INVERTED

2 TOTAL ILEUM BLADDER TO URETHRA INVERTED

3 TOTAL ILEUM BLADDER TO SKIN

4 TOTAL ILEO-CECUM BLADDER TO SKIN

1 AUTOGRAFT BLADDER TO DOME

2 SUBTOTAL HOMOGRAFT BLADDER

3 TOTAL HOMOGRAFT BLADDER -- POSTERIOR VIEW

4 TOTAL HOMOGRAFT BLADDER -- ANTERIOR VIEW

RESULTS

Our results have been variable

1 Nine of the dogs with sigmoid bl[illegible] [illegible]d fr[illegible] to 5 2/3 years with perfect continence

2 Six of these were sacrificed and the urinary tract found in good condition

3 Several of the bladder substitutes of ileum or ileo-cecum whether partial total reversed or otherwise died from peritonitis because of technical error while others lived from 3 to 7 months at which time they either died or were sacrificed In all these cases there were no disturbances to the ureters or kidneys with an exception of a unilateral hydronephrosis in one case

4 The results of the autograft bladder substitution were practically the same as the ileum substitution with from fair to good results

5 The homograft substitutes gave surprising results Two of the bladders took satisfactorily and gave promise for the building of a bladder bank which has already been started

6 There were electrolyte imbalances and elevation of blood nitrogenous products in all the dogs where these studies were made but returned to normal within ten to fourteen days

7 Pyelographically there was very little distortion of the outline of the pelves or calyces with demonstration of good function

CONCLUSIONS

1 Experiments on bladder substitutes in dogs react quite differently than in humans because of less control

2 Cutaneous urinary drainage as is obtained in substituting the ileum or ileo-cecum for a bladder in dogs is feasible and is a better procedure than a ureterocutaneous one

3 Partial ileo-bladder substitutes serve satisfactorily in dogs for increasing the capacity Good urinary control has been obtained

4 Total ileo-bladder and reversed ileo-bladder substitutes presented viable organs and warrant further study

5 Sigmoid bladder substitutes have given excellent results in dogs

6 Immediate and cold-stored autogenous and homogenous bladder replacements have taken satisfactorily in some cases Deep freezing the tissue has not been as successful

7 Ureteral transplantation in the small or large bowel offers less disturbances to the kidney if the bladder substitute portion is separated from the continuity of the rest of the bowel

8 Electrolyte imbalances and increases in blood nitrogenous products have been encountered in the beginning in ileo-bladder substitutes but gradually returned to normal

Reversible Hypertension due to Renal A tery Disease.

EUGENE F POUTASSE WILLIAM J ENGEL, and HARRIET DUSTAN Cleveland Clinic, Cleveland.

Renal art ry disease can produce hypertension at is destructively malignant, especially in young men Renal art thrombosis may be followed by ccelerated form of hypertensive scular disease. Renal artery narrowing due t intimal proliferation or teriosclerotic plaques produces simila hypertensive state but onset is more insidious. Visualization of e arterial defect by aortography and demonstration of diminished ex etory function in the affected kidney establish the diagnosis Nephrec omy or arterial gr ft, if the kidney is intact, should reverse the hypertensive vascular disease.

LESIONS OF THE RENAL ARTERY CAN PROD E HYPERTENSION THAT IS DESTRUCTIVELY MALIGNANT ESPECIALLY IN YO NG MEN RECOGNITION OF THIS CAUSE OF RENAL HYPERTENSION IS IMPOR ANT FOR IT IS REMEDIABLE

STEPS IN DIAGNOSIS

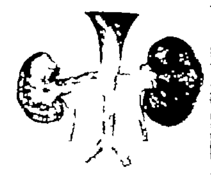
- HISTORY OF ONSET OF HYPE E SIO
  - ACCELER TE TYPE OF HYPERTENSIVE ASCU R DISEAS
  - FLANK P IN MAY ECEDE O ET F YPE TENSIO
  - NO FAMILY HISTO Y O YPERTENSION
- DIMINIS ED EXC TO Y FUNCTION IN A FECT D KIDNEY
- UROGRAPHY { FOC L CALYC L TROPH / REDUCTION IN REN L ASS / MAY BE NO L
- VISU LIZATION OF RT IAL FEC BY ANGIOGRA

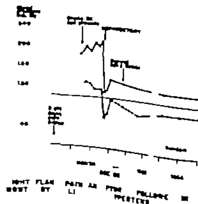




Case #1 THROMBOSIS WITH PATENT BRANCH

MODEL SHOWING LOCATION OF THROMBUS AND RENAL INFARCTION





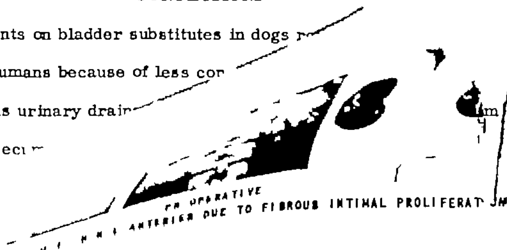
CONCLUSIONS

1 Experiments on bladder substitutes in dogs r

than in humans because of less cor

2 Cutaneous urinary drair

or ileo-ceci



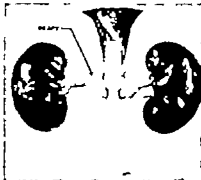




CROSS SECTION OF PROXIMAL (TOP) AND DISTAL STENOTIC SEGMENT







POSTOPERATIVE

ARTERIAL HOMOGRAFTS WERE USED TO RESTORE RENAL CIRCULATION

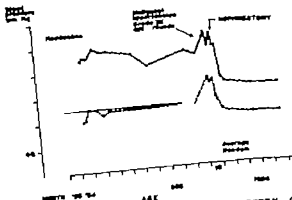
[illegible]	TREATMENT AND COURSE
MALIGNANT HYPERTENSION	NEPHRECTOMY [illegible]
PROGRESSIVE HYPERTENSION	NEPHRECTOMY – [illegible]
[illegible] MALIGNANT PHASE IN PRE-EXISTING HYPERTENSION	NEPHRECTOMY [illegible]
HYPERTENSION IN YOUTH ([illegible])	ARTERIAL HOMOGRAFTS – [illegible]





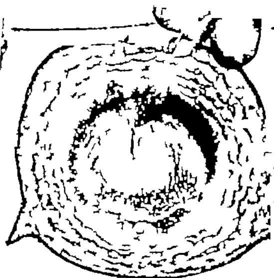
PLAQUE WITH JET CAUSING DILATATION OF LEFT RENAL ARTERY
POINT OF CONSTRICTION IS JUST BELOW THE NEEDLE

Case #3



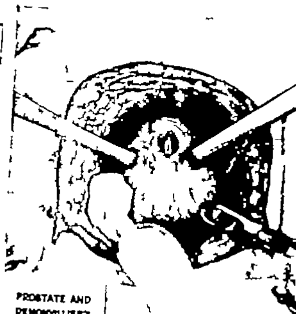
LEFT FLAN [illegible] 5 YEARS AGO KNOWN HY[illegible]ERTEN[illegible]ON, 3 YEA[illegible] S[illegible] SUDDEN ONSE[illegible] OF MALIGN[illegible]T HYPER-[illegible]NSIO[illegible]





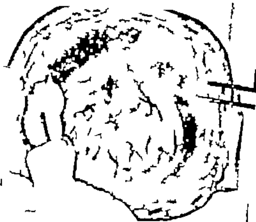
DENONVILLIER'S FASCIA AND PROSTATE EXPOSED; MEMBRANOUS URETHRA IS OPENED ON SOUND PROXIMAL TO EXTERNAL SPHINCTER

6



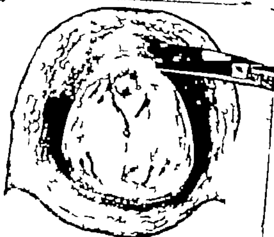
PROSTATE AND DENONVILLIER'S FASCIA EXPOSED AFTER BLUNT RETRACTION OF FASCIA

7



ANTERO-LATERAL FASCIA PUSHED LATERALLY; YOUNG'S TRACTOR INTRODUCED

8



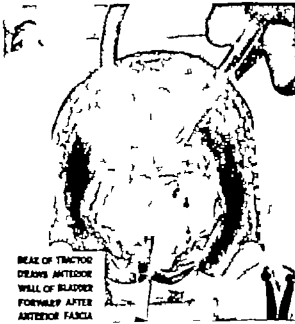
MEMBRANOUS URETHRA BEING DIVIDED

9



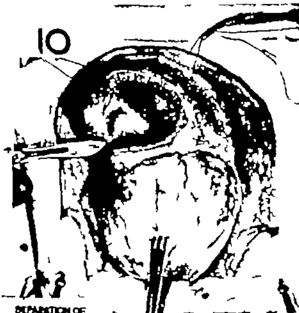
ANTERIOR SURFACE OF PROSTATE EXPOSED BY BLUNTLY DISSECTING THE PLEXUS OF SANTORINI USING TRACTION ON PROSTATE

10



BEAK OF TRACTOR DRAWS ANTERIOR WALL OF BLADDER FORWARD AFTER ANTERIOR FASCIA PUSHED AWAY FROM BLADDER. SCALPEL INTRODUCED THROUGH BLADDER IN MID LINE AT JUNCTION WITH PROSTATE

11



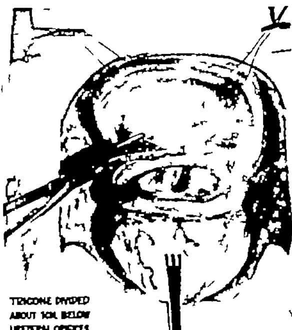
SEPARATION OF BLADDER NECK FROM PROSTATE CLOSE TO VESICO-PROSTATIC JUNCTURE

12



FLOOR OF BLADDER IS EXPOSED. TRIGONE, URETERS AND PROSTATE SEEN

13



TRIGONE DIVIDED ABOUT 1CM. BELOW URETERAL ORIFICES, ALLOWING REMOVAL OF PROSTATE WITH CUFF OF BLADDER

14



BLADDER AND TRIGONE PUSHED UPWARD EXPOSING SEMINAL VESICLES AND VASA DEFEREN- TIA

15



VAS DEFERENS CLAMPED AS HIGH AS POSSIBLE BUT WELL UNDER URETER

16



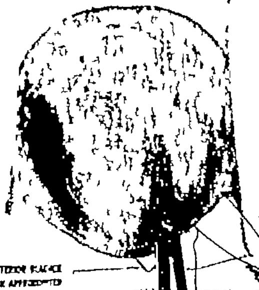
DR. VEST'S TECH- NIQUE OF CLOSURE. TRACTION SUTURES THROUGH URETHRA TO SUBCUTANEOUS TISSUE IN PERINEUM

17



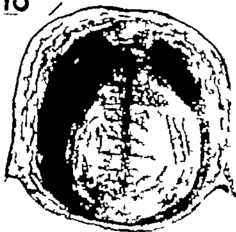
SUTURES TIED ON PERINEUM, TRACTION PRODUCES GOOD MEMBRANOUS APPROXIMATION AND MORE INJURY TO EXTERNAL URINARY SPHINCTER

18



POSTERIOR BLADDER NECK APPROXIMATED WITH INTERRUPTED SUTURES TO REDUCE SIZE OF VESICAL OUTLET

19



DIRECT ANASTOMOSIS OF NEW BLADDER NECK TO VENTRAL PORTION OF URETHRA PROXIMAL TO SPHINCTER

20



LEVATOR ANI MUSCLES APPROXIMATED IN MID LINE. ANASTOMOSIS IS DRAINED

21



SKIN CLOSURE WITH INTERRUPTED SILK

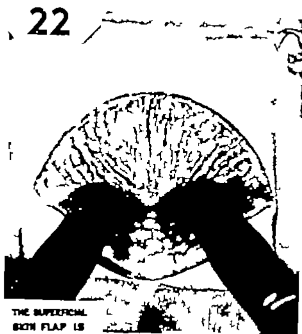
22



THE CURVING INCISION LINE IS 1½ CMS FROM THE MUCO-CUTANEOUS JUNCTURE OF THE RECTUM

TECHNIQUE OF DR ELMER BELT

1



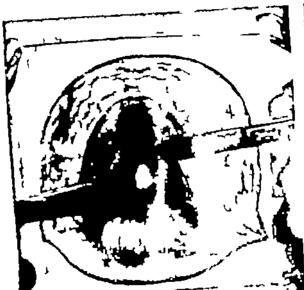
THE SUPERFICIAL SKIN FLAP IS PULLED DOWN, STRETCHING THE FIBRES OF THE MEDIAN RAPHE BEFORE THEY ARE CUT

2



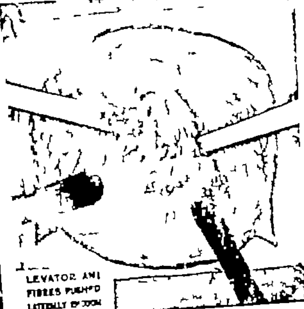
THE RED CIRCULAR RECTAL SPHINCTER IS EASILY PUSHED UPWARD AWAY FROM THE SHINING WHITE LONGITUDINAL FIBRES OF THE RECTUM

3



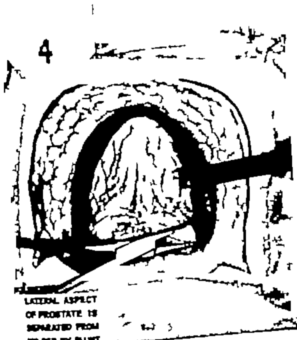
THE LEVATOR ANI MUSCLES ARE BLUNTLY SEPARATED FROM ONE ANOTHER IN THE MID LINE

4



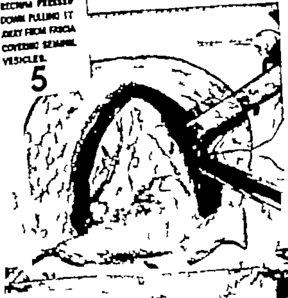
LEVATOR ANI FIBRES PUSHED LATERALLY [illegible] TO REVEAL WHOLE POSTERIOR ASPECT OF PROSTATE, THROUGH DENONVILLIERS FASCIA. RECTUM PRESSED DOWN PULLING IT AWAY FROM FASCIA COVERING SEMINAL VESICLES.

5



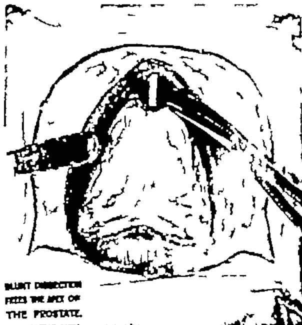
LATERAL ASPECT OF PROSTATE IS SEPARATED FROM ITS BED BY BLUNT DISSECTION, ISOLATING PEDICLE PUT UNDER TENSION BY PRESSING HANDLE OF SOUND TOWARD THE SIDE OF PEDICLE ISOLATION.

6



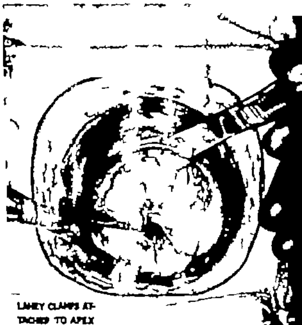
THE BUNDLE OF VESSELS ENTERING THE PROSTATE AT EACH LATERAL INFERIOR BORDER IS ISOLATED, CUT BETWEEN CLAMPS, AND SUTURED.

7



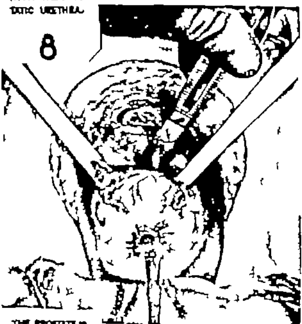
BLUNT DISSECTION FREES THE APEX OF THE PROSTATE. HERE THE MEMBRANOUS URETHRA IS CUT ACROSS AGAINST A SOUND AT ITS JUNCTURE WITH THE PROSTATIC URETHRA.

8



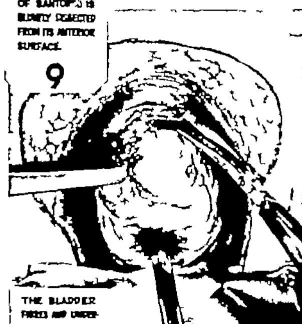
LAHEY CLAMPS ATTACHED TO APEX OF PROSTATE ASSIST IN DRAWING PROSTATE FROM THE WOUND AS VENOUS PLEXUS OF SANTORINI IS BLUNTLY DISSECTED FROM ITS ANTERIOR SURFACE.

9



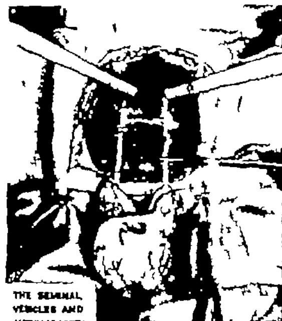
THE PROSTATE IS FREED BY BLUNT DISSECTION DOWN TO AND VISUALIZING BLADDER NECK FIBRES

10



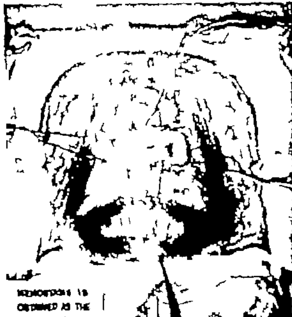
THE BLADDER FIBRES AND UNDERLYING MUCOSA ATTACHED TO THE PROSTATE AT THE NECK OF THE BLADDER ARE CUT AWAY WITH SCISSORS, AROUND ITS ENTIRE CIRCUMFERENCE

11



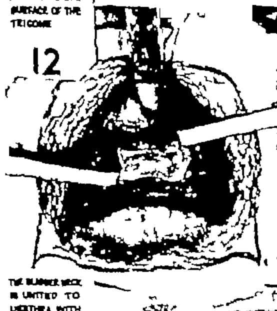
THE SEMINAL VESICLES AND AMPULLAE WHICH REMAIN ATTACHED TO THE SPECIMEN ARE FREED BY GENTLE TRACTION FROM THE UNDER SURFACE OF THE TRIGONE

12



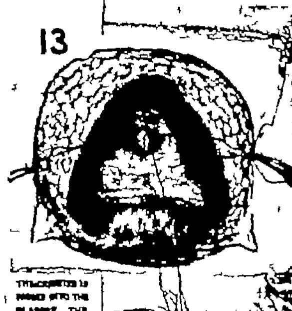
HEMOSTASIS IS OBTAINED AS THE SEVERED VESSELS AT THE BLADDER NECK ARE CAUGHT IN SUTURE LIGATURES, 4 OF WHICH USUALLY SUFFICE.

13



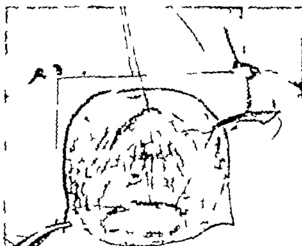
THE BLADDER NECK IS UNITED TO URETHRA WITH DOUBLE ZERO CHROMIC CATGUT SUTURES. THE 1ST IS PLACED ANTERIORLY AS CATHETER PASSED THROUGH URETHRA IS ELEVATED.

14



THE CATHETER IS PASSED INTO THE BLADDER. THE URETHRA IS JOINED TO THE BLADDER NECK WITH 3 ADDITIONAL SUTURES, ONE PLACED POSTERIORLY AND 2 LATERALLY

15



CONTINUITY OF URETHRA AND BLADDER NECK NOW EFFECTED A COVERING LAYER IS PLACED BY TACKING ENVELOPING FASCIA OVERLYING RECTUM TO ADVENTITIA OF URETHRA BEYOND SUTURE LINE.

16



INTERRUPTED SUTURES BRING THE LEVATOR ANI MUSCLES TOGETHER OVER THE URETHRO VESICAL ANASTOMOSIS. A ½" PENROSE DRAIN IS PASSED BETWEEN THE LEVATORS.

17



A PURSESTRING SUTURE APPROXIMATES THE EXTERNAL RECTAL SPHINCTER FIBRES TO THE ANAL RING. INTERRUPTED SUTURES REAPPROXIMATE THE SUPERFICIAL FASCIAL PLANES.

18



THE SKIN IS CLOSED WITH A CONTINUOUS SUBCUTICULAR SUTURE OF CHROMIC CATGUT

19

Demonstration of Technique of Endoscopic Prostatic Surgery

Roger W. Barnes, Roderick D. Turner, R. Theodore Bergman, and Henry L. Hadley, Los Angeles.

Models and drawings illustrate the progressive steps in the technique used for the removal of the prostate gland via the transurethral approach.

The Undescended Testis Problem.

Norris J. Heckel, James H. McDonald, and James A. Calams, University of Illinois College of Medicine and Presbyterian Hospital, Chicago.

The exhibit emphasizes the endocrine and surgical treatment of the undescended testis. Photomicrographs of scrotal and undescended testes at various ages emphasize the necessity of treatment at an early age. Depiction of location and pathological anatomy of testes that do not normally descend is illustrated by drawings centered about a large wax model.

The Thul-X—a New Portable Radiographic Unit for Use in Surgery

Donald E. Burke and Chester Winter, University of California Hospital, Los Angeles.

A new radiographic unit has been developed, using radioactive thulium-170 for the energy source, which is intended for use in the operating room, particularly to aid in the search for the elusive renal calculus. The characteristics of the isotope, thulium-170, are presented, the technique for use of the unit is discussed. Representative radiographs are presented.

A Modified Method for Handling and Administering Radioactive Gold in Carcinoma of the Prostate.

William J. Baker, Edwin C. Graf, Eugene Lutterbeck, L F Hidgson, D. H. Callahan, and Raymond Fehrer, Chicago.

Photographs and equipment demonstrate remote handling of radioactive gold and administering the Au[198] under pressure without undue exposure by the team. A descriptive paragraph describes each stage of the procedure.

Penile and Scrotal Injuries.

Ralph J. Holloway, David A. Culp, and W. C. Huffman, University Hospitals, Iowa City, Iowa.

Technique for repair of avulsions of the skin of the penis and scrotum is illustrated. Case studies show preoperative, operative, and postoperative results.

Urethroplasty

David A. Culp, Hans Kronmawetter, and Richard Porto, University Hospitals, Iowa City, Iowa.

Technique of Johanson-Dennis Browne urethroplasty is illustrated. Preoperative and postoperative urethrograms demonstrate improvement in urethral caliber and voiding.

Hydronephrosis, Secondary to Obstruction in Lower Ureter

Michael K. O'Heeron and James R. Finn, St. Joseph Hospital, Houston, Texas.

A series of pictures, drawings, and photographs of x-rays show cases of hydronephrosis secondary to obstruction in the lower ureters in females. Special emphasis is placed upon the changes secondary to carcinoma of the uterine cervix. The principles of treatment are discussed, with emphasis upon the use of a flap of bladder as a substitute for the lower section of ureter.

Salicylate Therapy for Recurrent Calcium Urinary Stone.

Edwin L. Prien and Burnham S. Walker, Boston University School of Medicine, Boston.

Orally given salicylate therapy, preferably by salicylamide, in doses of 2 gm. daily has prevented recurrence of calcium-containing calculi in [illegible] patients believed to be in process of active stone formation at th[illegible] as entered [illegible] the original study of 19 patients [illegible] with [illegible] renal recurrence there has been no stone growth in 16 over [illegible] ing from 4 to [illegible] months as a result of daily salicylamide [illegible] ion. Chron[illegible] alkaline urinary infection, sometimes by [illegible] bacteria, and irrecoverable obstructive lesions of the upp[illegible] act [illegible] present in some patients. Inhibition of excretion [illegible] urethral [illegible] patients with alkaline-encrustin[illegible] has been accomplished. The mechanism appears to be inc[illegible] ation of calcium salts through urinary glucuronide [illegible] d on salicylate therapy possibly associated with chelation of [illegible]

A Clinical Study [illegible] ew Renal Function Test: The Radioactive Diodrast Renogram

Chester C. W[illegible] and George V. Taplin, Wadsworth Veterans Administration Hospital and University of California at Los Angeles, Los Angeles.

The test is a direct-reading graphic record of the renal uptake and excretion of diodrast-I[131] through the use of external gamma-ray scintillation technique. It immediately provides quantitatively reproducible data on individual renal vascularity, tubular cell secretory function, and ureteral patency with little or no discomfort to the patient. The testing equipment is shown, the technique is explained, and renograms for various urologic disorders are presented.

A Bactericidal Additive for Pyelographic Mediums.

Russell B. Roth, Anthony F. Kaminsky, and Elmer Hess, St. Vincent's Hospital, Erie, Pa.

The presence of urinary tract infection has imposed certain limitations upon the safety of retrograde pyelography as a technique of urologic investigation, since it creates the danger of carrying infection into a previously uninfected kidney. This may be especially hazardous if stone or obstruction exists in the kidney in question. The addition of neomycin sulfate to form a 2.5% solution in any of the standard urographic contrast mediums has proved to be a safe, simple, and practical procedure. In a series of well over 300 pyelograms so made there has been no evidence of toxicity or mucosal irritation. It is possible, by this method, to carry out retrograde pyelography in spite of urinary tract infections that might previously have been regarded as contraindications to this form of investigation.

Renal Lymphatics: Experimental Studies.

Willard E. Goodwin and Joseph J. Kaufman, University of California Medical Center, Los Angeles.

The exhibit presents a summary of present knowledge of the function of renal lymphatics in states of health and disease. A series of animal experiments illustrating the importance of the lymphatics of the kidney as a safety valve mechanism during periods of diuresis and ureteral obstruction is included.

The Urinary Stone Problem.

Donald W. Branham, Joe E. Collins, and W. Friedman, the University Hospitals and Veterans Hospital, Oklahoma City.

The exhibit presents radiographic reproductions in black and white of the common urinary calculi as to type, location, and essentials of management.

The Horseshoe Kidney

Theodore R. Fetter and N. R. Varano, Jefferson Medical College Hospital, Philadelphia.

The type of fused kidney most commonly found is the horseshoe kidney. Detailed description, with photographs of a series of horseshoe kidneys found at surgery, the anatomic laboratory, and the postmortem room, is presented. The surgical management is presented and discussed. Charts indicating incidence, symptomatology, and diagnostic criteria are also presented. Several horseshoe kidneys mounted in plastic moulds are demonstrated.

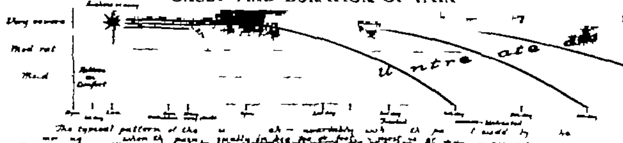
Gout.

L. Maxwell Lockie and John H. Talbott, University of Buffalo School of Medicine and Buffalo General Hospital, Buffalo

The exhibit places special emphasis on the treatment to be used in the acute attack of gouty arthritis and the outline of a program that has been effective in the prevention or decrease of subsequent attacks. The use of colchicine, probenecid, phenylbutazone and ACTH is outlined as it pertains to the care of the patient with gout and gouty arthritis.

DIAGNOSIS

ONSET AND DURATION OF PAIN



The patient with a typical attack of gout experiences the onset over a period of a few hours—usually awakening him. At this point the pain is extreme. If a patient has had an insidious onset extending over a period of several days, there is great doubt that this is gout, but rather a different type of arthritis.

Following the time of awakening, in an untreated patient, there will be 12-14 hours of severe pain. This could be called a "period of agony." There are few changes in symptoms at first and then gradually there *is a letting up of the intensity of the attack* so that over a 4-6 day period it will subside completely. However, if the knee or some joint other than the big toe or foot is involved, it may take weeks to subside completely.

BLOOD SERUM URIC ACID

With few exceptions always found above the normal level (6.0 mg./100 ml.)

5% of hospital patients without a history of gout have uric acid levels above normal

Along with the more accur e diagnosis of gouty arthritis, it is amazing th a very high percentage of patients—over 97 —will have abnormally high levels of uric acid in the blood serum that is, it will be over 6 0 mg./100 ml. The use of whole blood is not a accurate, as chromogenic substances are present which interfere with an accurate chemical determination of the uric acid content.

All of our male patients have uric acid studies made, even though no diagnosis of gout is made. It has been a surprise to us that several who have had a high reading, subsequently developed a typical attack of gout.

Five per cent (5%) of hospital patients have increased uric acid readings and have not had gout. It will be of great interest to follow them during the years to know how many will develop gouty arthritis.

IMPO ANCE C COLCHICINE

Colchi eve the symptoms in *one* form of arth and that is gouty arthritis. There are n such as phenylbutazone, cortisone, hydr rtisone, prednisone, prednisolone, ACTH and salic lates which will give relief in arthritis, but they are not specific for gout.

Colchicine is so specific, that arthritis relieved by full doses of colchicine makes one consider that diagnosis very seriously

Also, colchicine should be used with any other medication during treatment for the acute attack or following it. The results are better It could be called a "therapeutic catalyst" in these instances.

SUBCUTANEOUS TOPHI

OSSEOUS TOPHI

COMPARATIVE INCIDENCE OF TOPHI

	10 years ago	Today
Subcutaneous Tophi	30%	15%
Osseous Tophi	60%	40%
Both	60%	40%

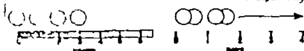
A tophus forms when uric acid is deposited either under the skin or in the bone. This is diagnostic of gout. Usually tophi form after acute attacks have started, but some patients have been seen who had tophi first.

The most common sites are shown on the charts. It is of great interest that the percentage of patients seen now with tophi—either subcutaneous or osseous—is considerably less than 10 years ago. This is due to two main reasons one, that the diagnosis is made earlier so that tophi have not had time to form and the other reason is that patients have received medication which aids in increased uric acid excretion. Probenecid now is the most effective of these agents and can be taken indefinitely without body harm. It tends to prevent tophus formation and will cause some tophi already formed to disappear

TREATMENT OF ACUTE ATTACK

COLCHICINE

Colchicine alone still the most widely used drug



○ Colchicine – 0.5 mg. oral

For several hundred years, it has been firmly established that colchicine alone is the drug of choice for the treatment of acute gout. So it remains today that it is the most widely used drug

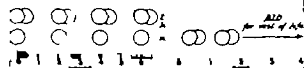
To be most effective, it is given in a dose of 0.5 mg at hourly intervals until gastrointestinal symptoms develop This usually requires 6-12 tablets, occasionally more. As soon as digestive symptoms occur the medication is stopped.

When used early complete relief follows in 24-48 hours. Thereafter it should be given twice daily indefinitely

Colchicine may also be given intravenously once or twice daily for several days, but it must be used with caution, as painful local symptoms appear if there is infiltration around the vein.

COLCHICINE + PHENYLBUTAZONE

Combination superior to either agent used alone



Colchicine appears to act as a therapeutic catalyst with other drugs

○○ Phenylbutazone – 200 mg.

○ Colchicine – 0.5 mg.

One tablet colchicine (0.5 mg) and two tablets phenylbutazone (100 mg each) given every two hours for four doses, is the most effective plan of therapy for acute gout.

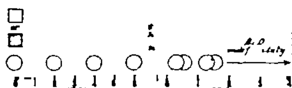
Colchicine seems to act as a "therapeutic catalyst in this form of therapy

The combination of these two drugs is far more effective than when either is used alone.

No reactions have been noted as due to phenylbutazone when this dosage is used. This is given one or two days at the most.

ACTH + COLCHICINE

Colchicine appears to act as a therapeutic catalyst with other drugs



□ ACTH 100 units i.m.

□ ACTH 20 units i.v. (8 hr. drip)

○ Colchicine – 0.5 mg. oral

Used in refractory cases

ACTH and colchicine are used in patients who are unable to take oral medication, or in those few who have not responded to other forms of therapy

The ACTH can be given either intramuscularly or intravenously

DIET

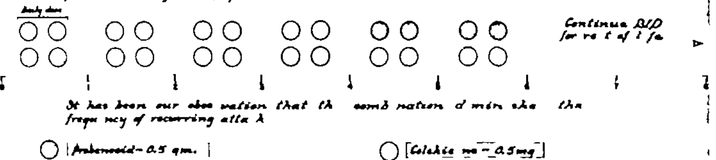
1. High carbohydrate, low fat, low purine, adequate protein
2. Diet – fish – fowl – omitted until the attack has subsided
3. Alcohol is a debatable question

Certain foods may act as trigger mechanisms for some patients (e.g. sardines, lobster, wine, etc.)

During the acute phase, all meat, fish and fowl should be omitted. In fact, most patients are too ill to care at this time.

Fluids shoud be given liberally—especially fruit juices.

TREATMENT AFTER ACUTE ATTACK



It has been our observation that the combination of probenecid and colchicine diminishes the frequency and severity of recurrent attacks of gouty arthritis. There are many patients who have been free of attacks after starting to take these drugs regularly even though some of them had many very severe attacks prior to therapy

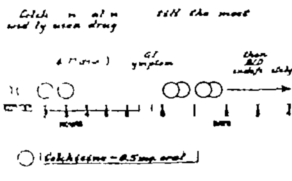
Patients with infrequent, mild gout probably do not need this intensive regular therapy but should be watched carefully

Probenecid and colchicine are strongly recommended under these conditions

1 Frequent attacks of gouty arthritis.
2 Subcutaneous or osseous tophi present.
3 High level blood serum uric acid

TREATMENT OF ACUTE ATTACK

COLCHICINE



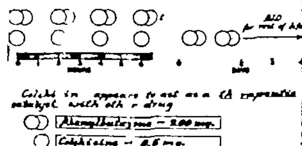
For several hundred years, it has been firmly established that colchicine alone is the drug of choice for the treatment of acute gout. So it remains today that it is the most widely used drug

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COLCHICINE+PHENYLBUTAZONE



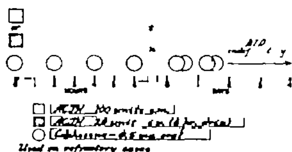
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No reactions have been noted as due to phenylbutazone when this dosage is used. This is given one or two days at the most.

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ACTH and colchicine are used in patients who are unable to take oral medication, or in those few who have not responded to other forms of therapy

The ACTH can be given either intramuscularly or intravenously

DIET

* 1 High carbohydrate low fat low protein adequate protein

* 2 Meat – fish – fowl – omitted at the attack

3 Alcohol is a debatable question

Certain foods may act as trigger mechanisms for some patients (sardines lobster wine etc)

During the acute phase, all meat, fish and fowl should be omitted. In fact, most patients are too ill to care at this time.

Fluids shoud be given liberally—especially fruit juices.

EAR TREATMEN FOLLOW UPS

Duration in days 2

Very severe

Moderate

Mild

Colchicine therapy

Probenecid therapy

W.S. - AGE 57

Before Probenecid

90 days per year

20 stones

5 days

With Probenecid

None

None

Incapacitated

Uric acid stones

8.0 - 12.0

Uric acid conc. mg /ml.

Colchicine therapy

Probenecid therapy

S R. - AGE 40

Incapacitated

Very severe

72 days lost - 8 years

Moderate

Uric

7.5 10.6

Acid

Conc. mg /ml.

3.9 - 6.2

Mild

Colchicine therapy

Probenecid therapy

Self-Help Devices for the Arthritic.

EDWARD W LOWMAN, Institute of Physical Medicine and Rehabilitation New York.

The exhibit consists of various self-help devices that may be used by arthritic patients to increase their personal self-sufficiency In addition, energy-saving devices for reducing work on damaged joints will be shown.

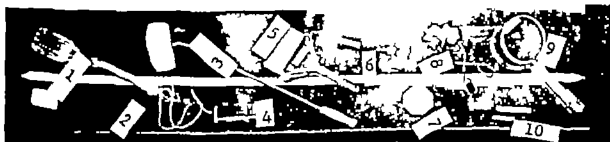


The patient with CHRONIC ARTHRITIS may sustain DAMAGE IN JOINTS which MECHANICALLY INTERFERES with the performance of activities necessary to INDEPENDENT SELF-SUFFICIENT LIVING This impediment may be in such simple activities as dressing or may only be reflected in the most demanding of activities i e traveling via public transportation

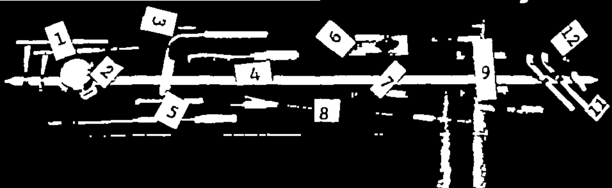
RESTORATION of functional independence THROUGH SPECIAL DEVICES is the goal in HUMAN ENGINEERING FOR THE DISABLED

In the treatment and rehabilitation of the disabled arthritic, SELF-HELP DEVICES should not replace the intelligent use of therapeutic measures which might remove the restricting impediment On the contrary, dev s should be used to compensate for impediments which the utically present an impasse The fewer devices used th asier will be the patient's mode of living ON THE OTH ND, THEIR INTELIGENT APPLICATION IS OFTEN THE KEY TO NING A WIDE VISTA of independence, self-reliance and sel ficiency

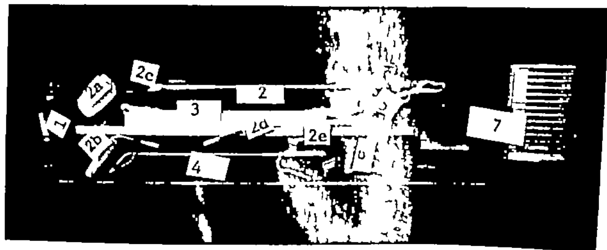
To justify their applicability to a wide population of persons afflicted with physical disability SPECIAL DEVICES SHOULD BE SIMPLE IN OPERATION AND REASONABLE IN PRICE The devices demonstrated in this Exhibit are but a few of hundreds designed for and applicable to the disabled patient



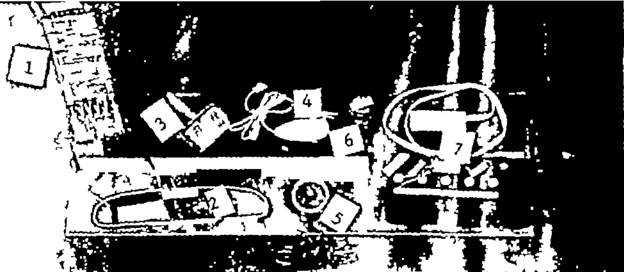
DEVICE		PURPOSE
1	Bathing brush with soap	- increases reach eliminates constant soap handling
2	Finger nail brush	- eliminates grasping can be fitted over hand
3	Bathing brush	- increases reach
4	Suction finger brush	- frees hands
5	Wash cloth or sponge holder	- increases reach
6	Sandwich holder	- increases reach
7	Hair brush	- easier to grasp
8	Nosewiper	- increases reach
9	Around the neck *mirror*	- frees hands
10	Button hook	- larger handle makes grasping easier



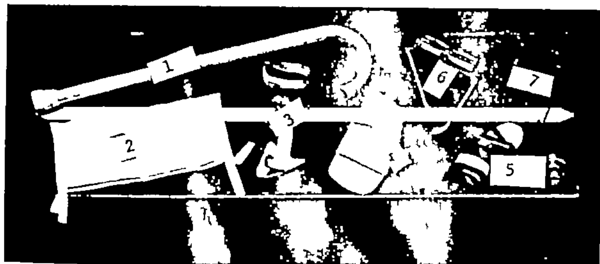
DEVICE	PURPOSE
1 Long handled spoon and fork	- increase reach
2 Glass holder with drinking straw attachment	- plastic glass and straw remove breakage problem handle makes glass easier to hold
3 Long handled comb	- telescoping allows for adjustment of length, angle makes combing easier
4 Large handled comb	- easier to grasp
5 Long handled toothbrushes with joint for angulation	- increase reach angle makes easier to use
6 Elastic shoe laces	- eliminate tying shoe laces
7 Utensil holder	- allows for holding utensil without grasping
8 Long handled shoe horn	- increases reach
9 Large handled eating utensils	- easier to grasp
10 Knife and fork combination	- allows for one-handed cutting and eating with same utensil
11 Rocker knife	- allows for one-handed cutting
12 Swivel spoon	- substitute for lack of rotation of the forearm



DEVICE		- PURPOSE
1	Shoe fastener	- eliminates tying shoe laces
2	All-purpose utility stick a sponge b comb c shoe horn d hook e magnet	- allows for interchangeable use of several devices [illegible] increased reach
3	Long handled shoe horn	- minimizes need for [illegible]
4	Reaching device	- increases reach
5	Garters on tape	- minimizes need for [illegible] drawing up undergar[illegible] hose
6	Reaching device	- increases reach
7	Home-to-school microphone	- permits homebo[illegible] continue school [illegible] microphone re[illegible] between home [illegible] room



DEVICE	PURPOSE
1 Model, spondylitis chair	- adapts to need of spondylitic for increased chair height and reclining back
2 Rear view mirror	- allows greater rear view
3 Lint remover	- eliminates exertion of brushing, energy saver
4 Electric scissors	- minimize hand motion connected with cutting paper or fabric
5 Remote control switch	- allows control of a single electrical unit from a distance
6 Steering wheel knob	- allows for control of wheel with palm of hand easier grasp
7 Multi-control unit	- allows control of several electrical units from a stationary position



	DEVICE	PURPOSE
1	Collapsible aluminum cane	- lightweight, durable, easily packed and transported
2	Partitioned pack filled with silica gel	- efficient means of applying hot, moist packs
3	Aluminum hand splint	- lightweight corrective splint
4	Fiberglass ulnar deviation splint	- lightweight corrective splint
5	Cigarette lighter in kit Separate lighter with plastic ring for holding	- minimal hand motion involved in lighting cigarette plastic ring on lighter allows for easier grasping
6	Prism glasses	- for reading in supine position
7	Rear view glasses	- minimize need for turning head for rear vision

Painful Shoulder Syndromes.

Otto Steinbrocker, Sidney Berkowitz, Mortimer Ehrlich, and Marvin Chesla, Hospital for Joint Diseases and Lenox Hill Hospital, New York.

An outline of the symptoms and present-day treatment of the intrinsic painful syndromes of the shoulder is presented, including the highlights of diagnosis and management and the distinctive features of each syndrome. The basic program used in all will be outlined, and the specific additional agents or local procedures for each condition will be detailed by charts, tables, drawings, and photographs.

Paget's Disease, an Example of a Disease with Which Arthritis Is Frequently Associated.

Edward F Hartung, New York University Postgraduate Medical School, New York.

The classification of arthritis as given by the Standard Nomenclature of Diseases mentions diseases in which arthritis, arthropathy or arthralgia are frequently associated. Paget's is one of these diseases. This exhibit reviews the diagnosis, the complications, the pathology and the treatment.

In particular this exhibit records the history of a patient with Paget's disease followed for 21 years, especially as to the variations in the alkaline phosphatase studies and the skull measurements.

The Significance of Laboratory Data in the Collagen Disorders.

William K. Ishmael, Richard W Payne, Marvin R. Shetlar, J N. Owens, and Mary L. Duffy McBride Clinic, University of Oklahoma School of Medicine, Oklahoma City

The polysaccharide protein ratio, cold hemagglutinin reaction, C-reactive protein, antistreptolysin titer, erythrocyte sedimentation rate, and the serum protein fractions are compared in a group of patients having rheumatoid arthritis, rheumatic fever, lupus erythematosus, dermatomyositis, and scleroderma. The results of these tests are correlated with the patients' course in an effort to evaluate their relative significance.

Sjogren's Syndrome: A Study of Nine Cases.

Charles W Denko, University of Chicago the School of Medicine, Chicago, and Delbert M. Bergenstal, National Cancer Institute, National Institutes of Health, Bethesda, Md.

The widespread symptomatology of Sjogren's syndrome, so similar to that seen in many connective tissue disorders, creates a diagnostic problem for the rheumatologist. The main manifestations of the fully developed syndrome include a chronic condition of dryness of eyes, mouth, nose, pharynx, and larynx, with polyarthritis of the rheumatoid type. An evaluation of the clinical characteristics of nine cases of this disorder is presented, with pertinent laboratory findings demonstrating the multisystemic involvement. C-reactive protein was usually present. Electrophoresis studies showed increases in the gamma globulin fraction. Pulmonary fibrosis was present in two patients. Biopsy material demonstrated lymphocytic or round cell infiltration of muscle, parotid gland, liver, and bone marrow The relation of joint involvement to gland involvement remains obscure. Treatment with steroids, especially prednisone, relieved joint pains and brought improvement in the dryness of eyes and mouth, although this was largely subjective.

Prednisone and Rheumatism.

Carl A. Berntsen, Russell L. Cecil, R. H. Freyberg, and W H. Kammerer, New York.

Statistical data on the results of treatment with prednisone and prednisolone in a group of patients with rheumatoid arthritis are presented. The majority of patients have been treated and followed over a period of 12 to 18 months.

Information About Arthritis and Rheumatism.

Russell L. Cecil and R. W Lamont-Havers, Arthritis and Rheumatism Foundation, New York.

The exhibit shows the services of the Arthritis and Rheumatism Foundation, with special emphasis on services to physicians and medical students, such as the Arthritis Clinic Manual and the *Bulletin on Rheumatic Diseases*.

Rheumatoid Arthritis: Diagnosis and Treatment.

Dwight C. Ensign and John W Sigler, Henry Ford Hospital, Detroit, Donald F Hill and W Paul Holbrook, Tucson, Ariz.

Rheumatoid arthritis is a potentially crippling joint disease. It is essential that an accurate diagnosis be made as promptly as possible. The salient features of diagnosis and differential diagnosis are presented. Photographs and roentgenograms illustrate characteristic stages of the disease. The importance of a comprehensive program is stressed, including education of the patient as to the nature of his disease, the use of therapeutic measures of proved value, and the importance of daily balanced rest and corrective exercises. Supplemental measures (gold salts, steroids) are presented. The usefulness of splints and other rest measures and simple devices as aids in daily activities is discussed.

Rheumatoid Spondylitis.

Theodore A. Potter and Theodore B. Bayles, Robert Breck Brigham Hospital, Boston.

The exhibit presents the life history of rheumatoid spondylitis with end-results of medical and orthopedic treatment of 318 cases followed from 4 to 30 years.

Osteoarthritis.

Bernard M Norcross and Salvatore R. LaTorre, University of Buffalo and Buffalo General Hospital, Buffalo.

The accepted etiological factors and the pathological features of osteoarthritis are reviewed. The differential diagnosis and treatment of osteoarthritis are demonstrated, with emphasis on new methods of therapy Photographs, x-ray and drawings illustrate the typical clinical and pathological findings and also the treatment of osteoarthritis.

Rheumatoid Arthritis: A Systemic Inflammatory Disease of the Connective (Collagen) Tissue.

Elam Toone, Gordon Hennigar, and John Vaughan, Medical College of Virginia, Richmond, Va.

The exhibit presents (1) a brief historical sketch to show the development of the present concept of connective tissue diseases; (2) photomicrographs of characteristic histological changes in various connective tissue diseases such as rheumatoid arthritis, rheumatic fever, disseminated lupus erythematosus, polyarteritis, and scleroderma, including a graphic display of the important points in the clinical pattern and a tabulation of the important laboratory tests of these diseases; and (3) electron microscopic demonstration of the fibrillar components of connective tissue and chemical description of the ground substance.

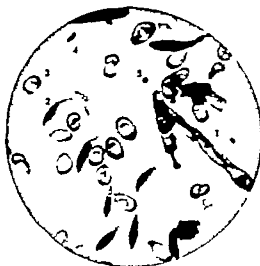
"Do You Have a Question, Doctor?"

A consultation booth has been arranged where visiting physicians may discuss problems regarding their patients who have arthritis. This booth is sponsored by the Arthritis and Rheumatism Foundation and the consultants are members of the American Rheumatism Association.

Air-Borne Mold Spores in Seasonal Allerg...

Oren C. Durham, Abbott Laborat ... th Chicago, Ill., and David Merksamer, Je ... pital, Brooklyn, N Y

During the summer and f ll the seasonal so ... tributa vast quantities of allergenic spores to the atmospher ... ty in the Mississippi and Ohio River Valleys. Sensitivity to ... se aller gens is more frequently manifested as seasonal asthma ... y fever and is more frequently found in children than in ... naria is the outstanding offender. This exhibit deals with se ... n and geographical incidence as show by nationwide atmo ... arried out over period of more than 20 years. Methods ... manage ment of mold spore allergy cases are outlined.



Spores of several species of soil molds and other seasonal fungi The mixed specimen here shown was dislodged in large qua tities from ripe wheat in the process of harvesting.

1 Helminthosporium,

2. Alternaria,

3. stem rust,

4. Hormodendrum,

5. smut.

Magnification 300x

While molds and other fungi of innumerable species will grow on any kind of medium, particularly on living and dead vegetation the great bulk of spores found in the air during the summer and autumn are of the types shown above These grow on wild and cultivated grasses, particularly on the cereals. Farmers, workers in grain elevators and in flour and feed mills are exposed to heavy concentrations. Rusts and smuts are not very active as allergens, but Alternaria is an outstanding offender

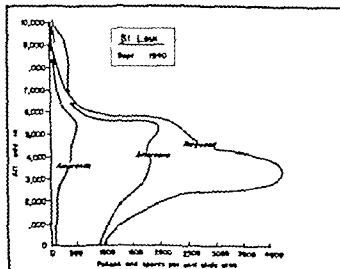


AIR BORNE MOLD SPORES IN SEASONAL ALLERGY

GEOGRAPHIC INCIDENCE OF ALTERNARIA SPORES.

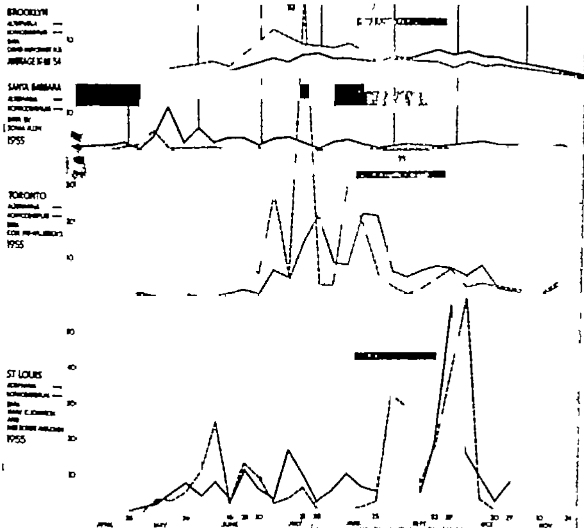
KEY

The data here shown have been gathered by allergists and botanists, members of and collaborators with the Pollen and Mold Committee of the American Academy of Allergy using standard methods for "gravity" sampling and counting of slides exposed daily throughout the summer and autumn. In some places the annual studies have been carried on continuously for as long as twenty years.



Vertical atmospheric incidence of Alternaria spores as compared with that of common air-borne pollens. Sampling was carried out from an airplane Saint Louis, Missouri September 9 1940. It will be seen that above 5000 feet altitude the Alternaria spores were as numerous as ragweed pollens and that on this day the spores were most abundant at levels of 2000 to 5000 feet

SEASONAL INCIDENCE OF MOLD SPORES

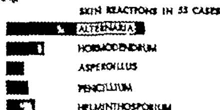


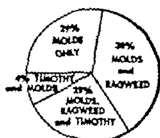
Four typical seasonal mold spore and pollen studies in widely separated areas. For pollens only the seasons, not the fluctuations, are shown It will be noted that the Alternaria and Hormodendrum seasons overl p both the grass pollen season and the ragweed season even beginning before the tree pollen season is finished. The daily counts have been plotted as weekly averages. Data from same sources as those used on the map on a preceding page

CLINICAL ASPECTS OF MOLD SPORE ALLERGY

COMPARATIVE IMPORTANCE

As wind-borne allergens, mold spores are second in importance to pollen. Alternaria causes more skin reactions and more clinical symptoms than do other molds.

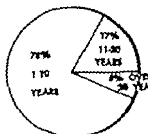


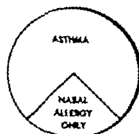


Most mold sensitive patients are also pollen sensitive. In the New York area less than a third are found to be clinically sensitive only to the molds.

AGE INCIDENCE

Most cases of mold spore allergy are found among children in their first decade.



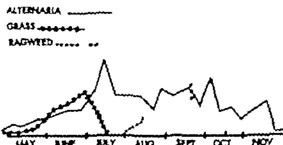


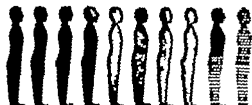
MANIFESTATIONS

Among mold sensitive patients bronchial asthma is most frequently the outstanding symptom, occurring alone or in association with rhinitis.

DIAGNOSIS

All histories of summer alle gy should be checked for time of occurrence with both of the pollen seasons and with the Alternaria season.





SPECIFIC THERAPY

Approximately 80 to 90 percent of mold sensitive patients obtain satisfactory relief from hyposensitization with properly selected mold extracts.

Special Exhibit on Fractures

The Special Exhibit on Fractures is presented under the auspices of the following Committee:

RALPH G. CAROTHERS, Cincinnati, Chairman.
HARRY B. HALL, Minneapolis.
CHARLES V HECK, Chicago.

Demonstrations will be conducted simultaneously each morning and afternoon during the meeting in each of five booths on the following subjects:

Fractures of the Ankle.

Traction for Upper and Lower Extremities.

Fractures Resulting from a Fall on the Hand.

Supracondylar Fracture of the Humerus.

Fractures Encountered by the Front Seat Passenger in Automobile Crash.

The demonstrations will deal with basic principles for the interest of the physician in general practice. A pamphlet presenting the essential features of the exhibit will be available for distribution.

FRACTURES OF THE ANKLE

When the ankle fractures the foot may be displaced

1. Outward—Abduction type (Potts)
2. Inward—Adduction type (Bimalleolar)
3. Backward—Trimalleolar (Cotton)
4. Forward
5. Upward—Compression type



1 Abduction



2. Adduction



3 Trimalleolar

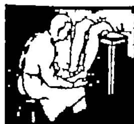


4. Forward



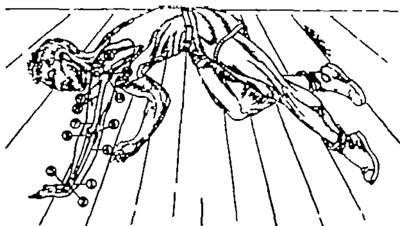
5 Vertical Compression

- TAKE X-RAY PICTURES BEFORE AND AFTER AND BE SURE THE REDUCTION IS GOOD IN BOTH PLANES.
- USE RELAXING ANESTHETIC FOR REDUCTION OF FRACTURES.
- FLEX LEG ON THIGH DURING REDUCTION TO RELAX CALF MUSCLES



- REDUCE FOOT DISPLACEMENT IMMEDIATELY DO NOT WAIT FOR SWELLING TO SUBSIDE.
- EMPLOY EARLY ACTIVE MOVEMENT AND LATE WEIGHT-BEARING AFTER ANKLE FRACTURE.
- HOLD REDUCTION IN PADDED PLASTER SPLINT

THE FALL ON THE OUTSTRETCHED HAND



WHAT TO LOOK FOR FOLLOWING A FALL ON THE OUTSTRETCHED HAND

The force may be dissipated in one or more locations.

1 The common Colles fracture
2. Semilunar dislocation
3 Navicular fracture
4. Monteggia fracture
5. Head of the radius fracture
6. Posterior dislocation of the elbow
7 Supracondylar fracture of the elbow
8. Shaft of the humerus fracture
9 Surgical neck of the humerus
10. Bruising the head of the humerus
11 Clavicle fracture
12. Subcoracoid dislocation



Colles' fracture.
Second stage—lateral view

Fracture of head of the ra.

THE FALL ON THE OUTSTRETCHED HAND



Posterior dislocation
of elbow



Supracondylar fracture
of elbow



Fractures of the shaft of the humerus. Radial nerve may be caught in callus.



Left, fracture of surgical neck of humerus.
Right, bruising of head of humerus.

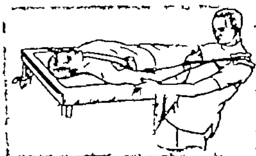


Fracture of clavicle.



Subcoracoid dislocation.

SUPRACONDYLAR FRACTURE OF THE HUMERUS

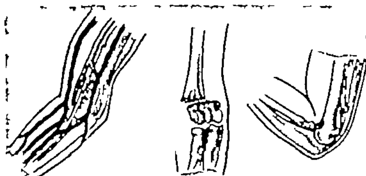




- JONES' POSITION IS "EASY FLEXION" AFTER EXTENSION AND THOROUGH TRACTION.
- REDUCTION MADE BY PULL. FLEXION HOLDS REDUCTION
- BEFORE REDUCTION TEST CIRCULATION AND NERVE SUPPLY AND CONTINUE TO WATCH CIRCULATION AND NERVE FUNCTION AFTER REDUCTION
- PAINFUL PASSIVE MOTIONS MEAN TEARING OF TISSUES. DO NOT "PUMP HANDLE" THE ELBOW IT DECREASES MOBILITY
- EMPLOY ACTIVE NOT PASSIVE MOVEMENTS AT ELBOW WHEN RETURN OF FUNCTION HAS COMMENCED
- REDUCE SUPRACONDYLAR FRACTURES BY
  1. EXTENSION OF FOREARM.
  2. TRACTION OF FOREARM.
  3. FLEXION OF FOREARM WITH MANIPULATION OF LOWER FRAGMENT
  4. AXES OF FOREARM MUST COINCIDE.
- IF NERVE FUNCTION OR BLOOD SUPPLY BECOMES IMPAIRED REDUCE THE FLEXION



Bad Good Bad



Common Type

SUPRACONDYLAR FRACTURE OF THE HUMERUS



Principle of traction and countertraction. Direction of forces is dependent upon specific type of fracture.



Supracondylar fracture showing relation of fragments to blood supply



Medial epicondyle fragment displaced in typical manner



Example of T or Y type of supracondylar fracture. Very unstable. Protect from further damage by careful handling.

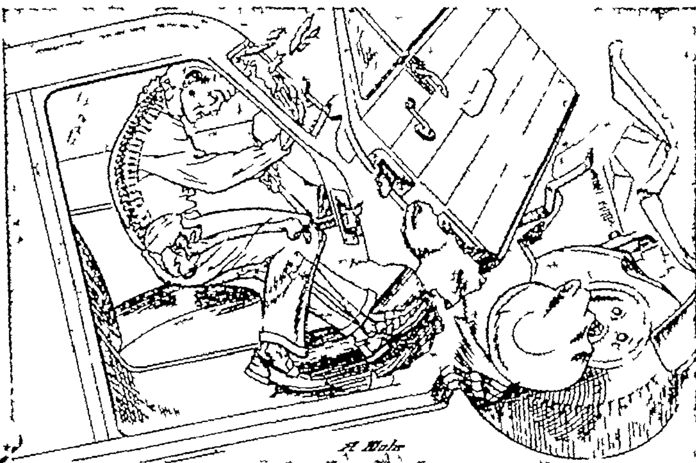


X-ray does not give entire picture. Note reason for rotation of lateral fragment and relation to radial head.



Fracture distal end of radius with tilt of joint surface showing impaction of fragments and shortening of the radius.

THE FRONT SEAT PASSENGER IN A CRASH



THE PASSENGER IN THE FRONT SEAT IS VERY VULNERABLE TO INJURY WHEN A CRASH OCCURS THE WHOLE BODY IS PRECIPITATED FORWARD WITH GREAT FORCE.

- THE HEAD USUALLY STRIKES THE WIND SHIELD AND IN ADDITION TO THE HEAD ITSELF GREAT FORCE IS APPLIED TO THE SPINE.
- IF THE HEAD AND HAND TAKE THE BULK OF THE FORCE, THE CERVICAL SPINE MAY BE INJURED
- IF THE KNEE STRIKES THE COWL, FORCES ARE APPLIED TO THE WHOLE FEMUR AND PELVIS.
- IF THE HEAD STRIKES THE WINDSHIELD AND THE KNEE STRIKES THE COWL, THEN THE FORCES MAY BE DISSIPATED IN THE SPINE ANYWHERE FROM THE FIRST CERVI CAL TO THE FIFTH LUMBAR.
- IF THE FOOT IS FORCED FIRMLY AGAINST THE FLOORBOARDS, THE FORCE MAY BE DISSIPATED IN THE FOOT ITSELF OR IN THE LEG UP TO THE KNEE.

THE FRONT SEAT PASSENGER IN A CRASH



Fracture of tibia and fibula from upward thrust.



Posterior dislocation and fracture of the acetabulum.



Intercondylar fracture of the femur



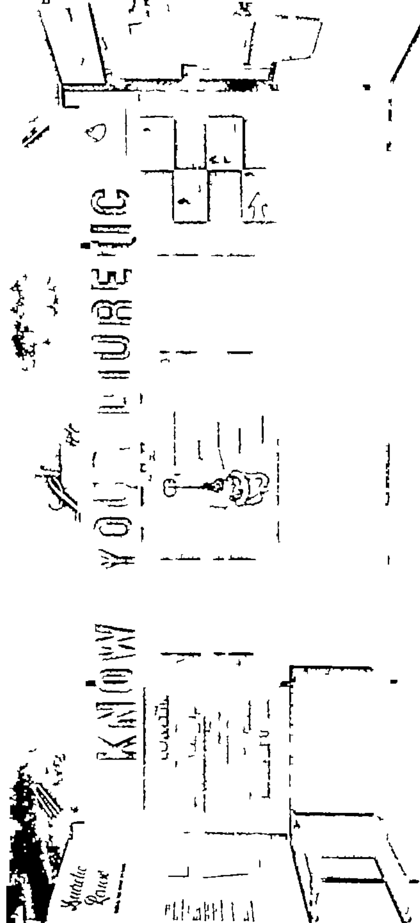
Fractured upper end of tibia into the knee.



Cervical spine, showing C1 dislocation, odontoid fracture and C1 dislocation, and dislocation C4 on C5

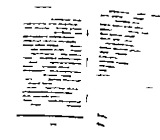


12th dorsal vertebra with severe compression.


KNOW YOUR FUTURE

Diuretic Review

COVERS ALL FIELDS CONCERNED WITH DIURESIS



clinical reassessment of modern oral diuretics	THERAPEUTIC
cardiocirculatory dynamics related to diuresis	CARDIOLOGY
fluid retention in hepatic cirrhosis the role of sodium in etiology and therapy	INTERNAL MEDICINE
kidney function in infants clinical physiology of urine concentration	PEDIATRICS
edema and sodium retention in toxemia of pregnancy	OBSTETRICS & GYNECOLOGY
the antidiuretic hormone in water balance	ENDOCRINOLOGY
regulation of acid-base balance the renal control of normal ion exchange	CLINICAL INVESTIGATION
radioisotopes and their uses in measurement of ion pools and spaces	EXPERIMENTAL MEDICINE
tests of renal function clinical aspects	LABORATORY DIAGNOSIS
effects of posture compression, and bleeding on the excretion of sodium	PHYSIOLOGY



COMMERCIAL EXHIBIT

TABLET

NEOHYDRIN

(BRAND OF CHLORMERODRIN)

13 MG OF 3 CHLOROMERCURI[illegible] METHO[illegible] PROPYL[illegible] EA[illegible] N EACH TAB[illegible]T

[illegible] 60 to 90 [illegible]

[illegible] the unwanted [illegible] body

[illegible] refractoriness

NEOHYDRIN CAN BE PRESCRIBED EVERY DAY
SEVEN DAYS A WEEK AS NEEDED

a standard for [illegible] control of severe failure

MERCUHYDRIN SODIUM

(BRAND OF MERALLURIDE INJECTION)

Q

Will your cardiac patients be able to continue the diuretic you prescribe?

A

Uninterrupted therapy is the key factor in diuretic control of congestive failure. This promotes the patient's comfort and well being by preventing recurrent sodium and water accumulation.

Q

Can your diuretic help you control all degrees of failure?

A

Widest coverage of all degrees of failure—not just mild cases—lets you control acute symptoms and prevents recurrences in all your cardiac patients.

NEOHYDRIN *and* MERCUHYDRIN *cover the whole spectrum of cardiac failure.*

know your diuretic

NEOHY

know
you
diuretic

NEOHYDRIN

NEOHYDRIN

know your diuretic

NEOHYDRIN

COMMERCIAL EXHIBIT